National Training Center Exercise Operating Procedures (EXOP)

This document supercedes all previous NTC EXOP publications, to include any an all documents. As such, this document is the “SOLE SOURCE” for rotational units addressing battlefield simulation. Local reproduction of this publication “IS AUTHORIZED”.

SEPTEMBER 2014

NATIONAL TRAINING CENTER
2014 EXERCISE OPERATING PROCEDURES (EXOP)
TABLE OF CONTENTS

NATIONAL TRAINING CENTER
2014 EXERCISE OPERATING PROCEDURES (EXOP)
TABLE OF CONTENTS

NATIONAL TRAINING CENTER
2014 EXERCISE OPERATING PROCEDURES (EXOP)
TABLE OF CONTENTS

NATIONAL TRAINING CENTER
2014 EXERCISE OPERATING PROCEDURES (EXOP)
TABLE OF CONTENTS

NATIONAL TRAINING CENTER
2014 EXERCISE OPERATING PROCEDURES (EXOP)
TABLE OF CONTENTS

Chapter 1
Administrative

CHAPTER 1 – ADMINISTRATIVE

1-1 Visits to the NTC

1. **General. The NTC enforces strict rules limiting access to the training area during rotational exercises to achieve a high degree of realism and prevent disruption of scheduled training. Visitors to NTC must be approved IAW FORSCOM REG 350-50-1. The visitor section of the Fort Irwin Web Page provides detailed information regarding visits to NTC.**

2. **Rotational Unit Visitors (RUV). To enter the training area all Rotational Unit Visitors must abide by the following restrictions:**

3. **Governing Regulation. All Rotating Unit Visitors are as described in FORSCOM REG 350-50-1, Pg 16, and Para 3-9.**

4. **NTC Protocol. Prior to entering the training area all visitors must be approved through NTC Protocol.**

5. **Uniform. Visitors are authorized to wear duty uniform (military members) or appropriate civilian attire when escorted within the training area. Kevlar helmets will be worn when traveling in tactical vehicles.**

6. **Live Fire. Visitors must wear Kevlar ballistic helmet and protective body armor during live fire exercises. This equipment will be donned prior to crossing Phase Line Dragon when in a live fire status.**

7. **Aircraft. Any use of aircraft in the maneuver area by visitors must be coordinated through the NTC Protocol and G3.**

8. **Contact with RTU. Visitors will refrain from activities that will interfere with the sanctity of the training event. Visitors who intend to interact with the rotational unit must be escorted by a protocol escort and a member from Operations Group to facilitate a smooth transition.**

9. **Additional Guidance. Rotational Unit Visitors (RUVs) will abide by all current NTC EXOP maneuver restrictions. RUVs will not use a tactical radio or give guidance during an engagement. With the exception of General Officers, if RUVs wish to view an AAR, they must watch the AAR from the overflow tent at the AAR site or make prior coordination with 52ID ID DTOC to view the AAR from building 990.**

10. **Point of Contact. For further questions on RUVs please contact Coyote 06, Chief, Protocol, NTC, Fort Irwin, CA 92310, DSN 470-4224/3000, Commercial (760-380-4224/300).**

1-2 Contractor & Special Visitors to the NTC

1. **Restrictions. Contractors and 'Special Visitors' not affiliated with the Rotational Unit and wish to visit NTC must be approved by the NTC G3. The visitor section of the Fort Irwin Web Page provides detailed information regarding contractor visits to NTC. Contractors must abide by the NTC EXOP and are subject to the following rules:**

2. **Interaction with the RTU. All contractor vehicles within the training area are subject to search by the rotational unit.**

3. **Passage through RTU TCPs. All contractors are required to pass through rotational unit Traffic Control Points (TCPs) and abide by rotational unit instructions when traveling within the training area.**

4. **Special Visitor ROE. To request a copy of the Special Visitor ROE or for further questions on NTC visits regarding contractors or special visitors please contact Lizard 03, Chief of Plans and Ops, NTC Operations Group at DSN 470-4423/4424, Fax 470-4424, Commercial (760-380-4423/4424/4422).**

1-3 OC/T Certification Requirements Overview

1. **The National Training Center Observer Coach/Trainer Academy (OC/T-A). The OC/T Academy is a two-phased certification training program designed to certify all assigned or attached OC/Ts on their duties as trainers, coaches, and mentors for the National Training Center and the rotational Brigade Combat Team (BCT). Phase 1 applies to all OC/Ts (Guests and Permanent Party). Phase 2 applies to OC/Ts permanently assigned or guest OC/Ts attached to "Critter Teams" for rotational support to NTC.**

2. **Phase 1. OC/Ts must complete all training during the four (4) day classroom training model (Phase-1), typically held BRD-4 thru Comp-2 or RSOI-1 thru RSOI-4. All FORSCOM tasked active duty guest OC/Ts are to be completed with Phase I training prior to RSOI 1.**

    a. **Phase 1. Training. All OC/Ts' must complete the training below as part of Phase 1:**

    NTC Rotation Overview
    Environmental
    MILES
    CALL
    COE
    AAR
    Composite Risk Management
    OC/T Duties and Responsibilities
    Exercise Operating Procedures
    RCS Communications

    OPS GRP and NTC permanently assigned and Guest OC/Ts must complete the requirements listed below in order to be considered certified OC/Ts:

The Team 07 is the certifying official for all OC/Ts assigned or attached as guests to his/ her team and is required to sign the authorization block on the Phase II checklist. The OC/T's training record must be completed, signed by the certifying official and maintained on file by the team for a minimum of two years. A copy of this document will be furnished to the OC/T Academy NLT 45 days from the date of RSOI 1 for that specific rotation.

3. **Phase 2. During the Phase-2 OC/T team performance requirement, each OC/T must receive a passing evaluation from their teams on all Phase-2 performance oriented training tasks by the end of the rotation. The Phase-2 checklist certification must be completed (NLT) BRD-5 following the rotation. Phase 2 checklists will be maintained on all OC/Ts at the Team level and a copy of the signed certification will be provided to the OC/T Academy to be maintained for 2 years. The Phase-2 must be signed by the team 07. The Team 07 is the only certifying official for their team.**

    a. **<u>Phase II (Team Specific Requirements)</u> Team Specific Requirements for Phase II certification vary by Team. Teams 07s are responsible for developing his/her own Phase II specific requirements. These requirements should pertain to the Teams primary mission.**
    b. ***Note:*** **These are phase II requirements for all teams, to be observed and validated by certified team primary or alpha upon satisfactory completion of each task.**
    c. **Certifying OC/T Teams will observe the student conduct a minimum of two (2) AARs during Phase II. Students' AAR may be at a lower level than the certifying OC/T, i.e. PLT Trainer may observe student give a Platoon, Squad or Crew AAR. Supervisors will provide feedback to OC/Ts on their AARs.**
    d. **Phase 2 Checklist Items: See Phase 2 Checklist for details. Certifying Official must ensure a qualified OC/T has observed and initialed each item on the checklist prior to signing off as the certifying Team Chief for that team.**

4. **Dragons/Warrior 27/27A Certification Checklist. Live Fire OC/Ts (Dragons & W27/W27A) must have a deeper understanding of targetry, SDZs, MSD/ MSLs, NTC waivers and NTC Live Fire TTPs to safely control live fire at the National Training Center.**

    a. **Applicability and Additional Tasks. All the OC/T General Requirements still apply. For Dragon personnel, additional requirements include the following: Show a clear understanding of: Use of surface danger zones (SDZs), Fire mission clearance procedures (W27/W27A/D27/37/47 only), Fire mission processing procedures (W27/W27A/D27/37/47 only), Be familiar with supported Team's procedures, Attend briefing on NTC Annual Waivers and demonstrate knowledge of the waivers, Attend Live Fire safety planning practical exercise class, Attend orientation on targetry and Live Fire Driver, Attend Live Fire Leader Briefing (RSOI week), Demonstrate proficiency in building surface danger zones (SDZ) IAW DA PAM 385-63, Graduate from Joint Firepower Course (mandatory), Graduate from US Army Range Safety Course Level II (mandatory).**

5. **Targetry and Graphics. Dragons are responsible for positioning targetry and developing (with the DIV Planners) graphics IAW the approved scenario which can be executed safely by the rotational unit.**

6. **Proof of Unit LFX Plans. Dragons proof each units plan during MDMP to ensure the unit has applied its own control measures to conduct the operations safely.**

7. **During Execution. During the execution phase, Dragons must gain and maintain complete situational awareness and be in constant communication with OC/T teams to manage raising and lowering of targets, clear direct/indirect fires, and ensure correct weapons control status are initiated.**

8. **Live Fire Mission Requirements. EXOP Live Fire Certification. Permanent Party and Guest OC/Ts must be certified IAW Live Fire Chapter of the EXOP according to the following standards: Attend Live Fire Certification Brief in OC/T Academy, Attend the Live Fire Effects Safety Brief, Pass Live Fire Certification Test, The OC/T will ride along with a certified OC/T and observe the coverage and safety procedures for live fire operations, The OC/T must demonstrate proper knowledge of staking procedures, safety procedures, and coverage procedures in the defense.The OC/T must demonstrate proper knowledge of safety procedures, and coverage procedures during offensive operations.**

9. **Observer Coach/ Trainer Refresher Course Selection. OC/Ts identified by their Team 07 or 40 as needing additional training will attend the OC/T refresher course held each quarter during RSOI-4 and RSOI-5 or White Weeks by OC/T-A. OC/Ts must complete Phase 2 of their training with their teams before going to the refresher course. This course will focus on reinforcing OC/T duties and skills, AARs, and the EXOP.**

    a. **Topics Include: OC/T Duties, Responsibilities, and Reports, Heavy emphasis on AAR preparation, products, and process, Exercise Operating Procedures (EXOP), Other areas of emphasis as needed.**

1-4 NTC Instrumentation System and MILES

1. **Overview. The NTC Instrumentation System (NTC-IS) and MILES facilitate realistic exercises by providing real-time feedback and extensive recording of the actions of Soldiers, weapon systems, and vehicles. Instrumentation allows the Operations Center to track specific movements of units and key leaders, and to record engagement 'firing events' involving direct and indirect weapon systems on a full effects battlefield and data retrieval and playback for use during After Action Reviews (AAR) and other analysis.**

2. **Baseline Instrumentation Standards. All combat vehicles will have instrumentation installed prior to leaving the cantonment area. The instrumentation will remain on at all times unless specifically directed otherwise by a OC/T. All combat vehicles are equipped with a permanent system. For dismounted operations, a limited number of man portable systems (IWS with MIKS (Man Instrumented Kits) are available. Strict adherence to MILES and Instrumentation policies is essential in maintaining fidelity both on the battlefield and in the data collected.**

1-5 MILES Requirements

1. **MILES Standards. All Personnel and vehicles/systems must have operable MILES at all times on the NTC battlefield while in the training area. Personnel and vehicle systems with inoperable MILES will not participate in training. The training area is defined as extending from the BLUFOR light lines to the COEFOR rear boundary. The only exemptions to this requirement are listed below:**

2. **OC/Ts may exempt Soldiers and/or systems from the MILES requirement when the wear or installation of MILES presents a clear safety hazard. For example, maintenance personnel operating in restricted areas where IWS could become caught in machinery.**

3. **Aerial platforms which the installation of MILES has not received air-worthiness certification.**

4. **Drivers of COEFOR tanks and armored personnel carriers while operating their vehicles.**

5. **No vehicle or personnel will be exempted from battlefield effects without approval from the COG. Vehicles with a waiver signed by the Commander, Operations Group NLT RSOI-4 are authorized to train without operational MILES.**

6. **Visitor/contractor exemptions outlined in chapters 1-1 and 1-2.**

1-6 Maintaining MILES

1. **Responsibilities. It is a rotational unit responsibility to maintain MILES equipment. Units will properly utilize their MILES equipment, identify malfunctioning MILES equipment, and correct MILES failures through the use of the MILES contact teams. Rotational units receive initial battery issue when drawing the equipment and are responsible for ensuring operational AA Lithium, 3.6v, 3.0v and BB390 batteries are kept in individual and vehicle MILES system battery boxes respectively at all times. During the rotation, OOC/Ts will routinely test BLUFOR and COEFOR MILES to ensure fidelity of the NTC battlefield without compromising Soldiers and systems. During night testing units may temporarily cover the Combat Vehicle Kill Indicator (CVKI) to prevent possible location compromises. OC/Ts will assist rotational units in correcting MILES failures, replace BB390 batteries on a one-for-one basis, and provide the unit with their MILES contact team location.**

1-7 Individual MILES

1. **Standards. All BLUFOR and COEFOR personnel forward of the DSA/RSA will be equipped with and wear either an Individual Weapon System (IWS) or a Manworn Instrumented Kit (MIK). Additionally, all personnel (both BLUFOR and COEFOR/COBs) will carry a MILES casualty card. The IWS provides a near-missed and hit capability, but no integrated tracking or AWES sensing ability. On the other hand the MIK has the capability of the IWS plus a (DCIU) position locating and AWES sensing capability and is issued to every squad and each separate dismounted element operating on the battlefield.**

2. **Exceptions. Units may request their scouts wear boonies hats in lieu of the ACH. This request must go through the rotational unit senior trainer to the COG no later than RSOI-2. If approved, the MILES halo must still be worn on the boonie hat. ACH ballistic helmets will still be worn when riding in tactical vehicles and during live fire operations.**

1-8 Vehicle/System MILES

1. **Tactical Vehicle System (TVS). All wheeled combat, reconnaissance HMMWVs, civilian, or non-standard military vehicles going forward of the LD, or Company/Team areas, will be equipped with the TVS, and be instrumented or have a OC/T escort. MILES gear for vehicles and weapons consists of vehicle detector modules, Crew Control Module (CCM), Vehicle Kill Controller (VKC), Vehicle Kill Indicator (VKI), cables and adapters. In certain cases the TVS can be equipped with a Individual Weapon System 2 (IWS2) Small Arms Transmitter (SAT) that will enable the weapon system to be associated with the vehicle instead of the crew. TVS will be used to enable non-standard vehicles and equipment, for example bunkers and bulldozers, to be fitted with a MILES system. On wheeled support vehicles without MILES, the IWS of the vehicle occupants represents the vehicle MILES.**

2. **Aircraft. COEFOR and BLUFOR aircraft will be equipped with operational MILES and an operational MILES B or MIK at all times in the maneuver box for Airspace control de-confliction.**

3. **Master Switches and Turret Power. Master switches will be kept on at all times. Vehicles with separate electrical turret power systems (e.g., M2/3, M1A2) must keep turret power on also. Aircraft MILES will not remain operational when the aircraft is shut down.**

4. **Sensor Module Visibility. Vehicle detector sensors must not be covered by camouflage nets, personal gear, or anything else when engaged in the direct fire battle. Vehicle detector sensors must be able to be engaged when a vehicle is in the forward level (firing platform) of a survivability position.**

1-9 Restricted MILES Equipment/Procedures

1. **Restricted Equipment. The possession of a Universal Controller Device (UCD) at NTC is restricted. Rotational units will not bring UCD to the NTC with the exception of aviation FARPs which may have one to affect the re-arming of attack aircraft.**

2. **Restricted Procedures. OC/T Teams will coordinate for unit requirements to conduct zero and bore sight ranges. Dry Fire (MILES) is not permitted during force-on-force combat operations. Units may dry fire when bore-sighting only. (Dry Firing a MILES weapon system requires a OC/T controller gun for resurrecting engaged vehicles and personnel. Units must request support from a OC/T).**

1-10 Restricted Pyrotechnics

1. **Yellow/Violet Smokes. Neither Yellow nor Violet smoke are authorized for rotational or COEFOR unit use. Yellow smoke represents CBRN. Violet smoke represents SCATMINE.**

2. **Red Pyrotechnics. Red pyrotechnics indicates an emergency situation, and is used in marking LZs for MEDEVACs.**

3. **Restricted Item Disposition. Soldiers will not accept CS, simulators, or yellow/violet smoke as issue. If these items are found in the box, Soldiers will mark the item and report it through their chain of command using the standard 9-line UXO spot report. At no time will Soldiers touch, move, or transport UXO.**

1-11 Key Leader Second Lives

1. **General Guidance. Key leaders such as the BCT and BN Task Force Commanders, primary staff officers, company commanders, platoon leaders, and Network Operations warrant officers may be given a second life and if mounted, transfer to another vehicle (jump ship) if their assigned vehicle is assessed as damaged or destroyed. They may do this only with OC/T approval and only once during a battle. This allows the leadership the training opportunity to continue with specific missions. The OC/T reserves the right to disapprove second lives in order to develop subordinates. Team 07s may allow additional transfers if deemed necessary for certain key personnel, such as the Task Force commander or S-3.**

1-12 Higher Headquarters

1. **General. The 52ID (Warrior) operates as the Rotational Training Unit higher headquarters (HICON) for all tactical orders and briefings from RSOI 1 to Training Day 14, and functions also as the exercise control (EXCON) for the training environment . There is no other recognized command and control headquarters while conducting operations at the NTC.**

1-13 Vehicle Movement

1. **General. Vehicle accidents are the number one cause of injuries during training rotations at the NTC. Excessive vehicle speed is involved in most cases. Table 1-11 outlines rotational unit speed limits. However, personnel will not drive faster than is prudent, given road, vehicle, and driver conditions. Tracked vehicles will only cross paved roads at a ninety degree angle (perpendicular) during force-on-force training. When units are in contact, vehicles may execute tactical evasion drills and other maneuvers IAW unit safety risk assessment. Temporary dashes at high speeds are permitted providing vehicles are not within, or closing within 5/10/50 meter rule of other Vehicles/personnel and provided life, limb, eyesight and property are not placed at undue risk. Unit commanders will establish limits/guidance for their Soldiers.**

2. **Interception procedures. Physical contact between vehicles during pursuit, interception or other forms of non-lethal contact is prohibited. Tracked or wheeled vehicles that attempt to pursue or**

interdict civilian or paramilitary "role playing" vehicles must stop the vehicle they wish to interdict while abiding by the 50 meter rule, visually signal the passengers of the intercepted vehicle to stop and exit the vehicle, and inform their accompanying OC/T of the actions they wish to take with the vehicle (e.g., stop and search, etc).

Normal Daytime Conditions			
Road Type	**Wheeled Vehicles**	**Track Vehicles**	**Convoy Operations**
Improved Roads	**35**	**25**	**20**
Unimproved Trails	**25**	**20**	**15**
Limited Visibility Conditions			
Road Type	**Wheeled Vehicles**	**Track Vehicles**	**Convoy Operations**
Improved Roads	**25**	**20**	**15**
Unimproved Trails	**20**	**15**	**10**
Cross-Country	**10**	**10**	**5**

3. **Vehicles towing trailers or equipment will utilize unimproved trails speed limit during normal daytime conditions, limited visibility conditions and convoy operations.**

    a. **<u>Improved roads:</u> Barstow Rd MSR, Langford Lake MSR, East Range Rd MSR, Bitter Springs MSR, Flagpole MSR, Silver Lake MSR, Pioneer/Debnam Pass MSR.**

    b. **<u>Unimproved Trails:</u> Trails/Cuts/Passes that are not leveled or graded and have no visible maintenance but are recognizable to drivers.**

    c. **<u>Limited Visibility Conditions:</u> Any environmental condition that impairs normal visibility; includes heavy dust, CT-OISset, night operations (under white light or NVGs), and inclement weather.**

    d. **In any case where there is a speed limit sign, obey the posted limit.**

4. **Civilians on the Battlefield – Vehicles (or COB-V). In order to adequately train the force in the current Operating Environment, we must be able to provide realism when simulating civilians on the battlefield (COB). Civilians on the battlefield vehicles (COB-Vs) are non-military or civilian style vehicles used in the training area during rotational training that simulate indigenous vehicles and enhance battlefield and operational realism.**

5. **General/Liability. COB-Vs represent a unique category of unregistered and unlicensed government-owned vehicles. While the use of COB-Vs enhances overall training, their use and existence also causes an impact on Safety, Environment, non-forecasted operating and maintenance costs to the installation, and legal liability.**

6. **Restrictions. After significant staffing across the National Training Center (NTC) and Fort Irwin and coordination with FORSCOM resulted in an approved use of COB-Vs at the NTC and Fort Irwin. To minimize and/or mitigate the potential negative impact COB-V use may have on the NTC, FORSCOM's approval is subject to the following restrictions:COB-Vs will only be operated by Soldiers, COB-Vs will only be operated in the Training Area only and NOT operated within the Cantonment area. COB-Vs will only be used for training the RTUs. They will not be used to support NTC unit's missions to include, but not limited to, LOGPAC runs and transportation of personnel (Soldiers or contractors) to and from the training area. Refueling COB-Vs will be refueled IAW the responsible Organization's SOP. Pre-inspectoins will be conducted prior to use IAW the responsible Organization's SOP to ensure minimum safety measures are functioning properly (Ex. Seat belts, brakes, signals, lights, horn, etc.) All COB-Vs will be placed on the IPBO Property Book for accountability.**

7. **Accidents. COB-Vs accidents will be reported in the same manner as an accident involving a military or government-owned vehicle. (Ex. DA 285-AB Feb 09 U.S. Army Abbreviated Ground Accident Report (AGAR) Download Form). Accident reports will be submitted through the responsible organization with a copy to the NTC Safety Office where any damage to a COB-V occurs involving a government-owned vehicle.**

    a. **Accidents involving property damage/cost/repair will require that a financial liability investigation of property loss (FLIPL) will be initiated by the responsible organization. If the COB-V is repairable, then actual or estimated cost of damage from the repair shop will be used. If the COB-V cannot be repaired, "COB-V" will be printed in the blocks calling for the cost of damage. Disposal of damaged COB-Vs exceeding the economically repairable level will be accomplished with the assistance of the PBO IAW appropriate regulations.**

    b. **If a Soldier is injured due to a vehicle maintenance issue, a line of duty investigation will be performed IAW with AR 600-8-4 as it would in any accident, regardless of vehicle type.**

1-14 Off-Limits and Restricted Areas

1. **General. NTC has several environmentally sensitive areas within the training area. These areas are either off limits to all personnel or restrict the types of vehicles and operations that may occur in the area. These areas are off limits to all personnel at all times. They are marked with off limits signs or marked as "off limits" on the overprinted NTC map. All dry lakebeds are off-limits.**

2. **Depictions. Restricted Areas are marked as 'Restricted Maneuver' on the overprinted NTC map. Wheeled vehicles and dismounted operations are authorized in all restricted maneuver areas. However, tracked vehicles are not authorized in restricted areas without clearance from range control and the environmental section of NTC's DPW. Bulk refueling is not authorized to occur on or within 500 meters of any dry lakebed.**

1-15 No Dig and Restricted Dig Areas

1. **Digging in the NTC Training Area is classified as either Tactical or Administrative. Tactical Dig Operations do not require a dig permit and are approved by the on-site OC/T, Palehorse OC/T, or NTC dig authority. Tactical Digs are digs that support the RTU's/COEFOR's tactical operations. Table 1-15, Figure 1 provides examples of the most common tactical digs. Administrative dig operations are all dig operations other than tactical digs, and require an approved NTC Dig Permit before digging may commence. NTC has several hazardous areas within the training area that either prohibits or limits any type of excavation. No Dig Areas: Areas that prohibit digging due to the high risk of uncovering unexploded ordnance, hazardous materials or archaeological sites. These areas are marked as "No Dig" on the overprinted NTC map and "No Dig" signs are posted in the training area.**

2. **Proximity Warning Units All digging or excavation equipment must be equipped with the Proximity Warning Unit (PWU) which will be installed in the MILES yard during RSOI. The PWU is a GPS enabled warning system that will warn the operator when he/she is operating too closely to a buried cable or utility line.**

3. **Hazardous Locations. NTC has several hazardous areas within the training area that either prohibits or limits any type of excavation. No Dig areas prohibit digging due to the high risk of uncovering unexploded ordnance, hazardous materials or archaeological sites. These areas are listed in Table 1-13, Figure 1. These areas are marked as "No Dig" on the overprinted NTC map and "No Dig" signs are posted in the training area.**

4. **Fiber Optic Cable. Due to the addition of Fiber Optic cable to the maneuver area the following areas have been added to the No Dig areas; all MSRs (see paragraph 1-16 for specific distance and definition); all fiber drop locations at all Forward Operating Bases (FOBs), towns and AAR locations that have fiber run to them. All fiber locations are marked with orange Sibert stakes that have the words "Fiber" on them. Fiber optics run along all MSRs and enters each FOB from the MSRs at a 90 degree angle.**

5. **Rotational Unit RSOI. As part of RSOI rotational units must ensure they receive approved dig areas on each FOB from their counter-parts.**

6. **Restricted Dig Areas. Restricted dig areas are former impact areas or portions of former impact areas that have been cleared and are authorized for excavation under a FORSCOM waiver. Table 1-13, Figure 2 lists these restricted dig areas and the area marked as "Restricted Dig" on the overprinted NTC map. The following restrictions apply: In the event of an accident or injury occurring as a result of this waiver, the waiver is invalid until reinstated by FORSCOM. The surface area will be inspected for unexploded ordnance before the start of digging. The rotational unit will designate and have an observer present while digging to identify unexploded ordnance. All control measures must be followed even in positions where fighting positions were previously dug. No digging will occur from sunset to sunrise.**

7. **All engineer equipment (all models of Dozers, ACEs, HMEEs, DEUCES, SEEs, Scrapers, Bucket Loaders), can dig in restricted dig areas in hours of daylight as long as the operator and observers wear flak vest and Kevlar helmets. In the event that unexploded ordnance is observed, digging operations at that site will cease until the area is cleared by EOD.**

1-16 MSR Restrictions

1. **General. The following MSRs must remain open for safety/evacuation purposes and will be specified in the 52ID Deployment Order: RTE Ia Drang (East Range Road), RTE Bull Run (Barstow Road), RTE Long Island (Langford Lake Road / Red Pass Road), RTE San Juan (Silver Lakes Road), RTE Osan (Goldstone Road) and RTE A Shau to RTE Saigon to RTE El Caney.**

2. **Digging. With the exception of Barstow Road, digging may occur up to within 50 meters of the edges, but not across these MSRs. Fiber Optic cable runs along all MSRs and units are not authorized to dig or excavate within 50 meters of the road on either side to include tank trails. Barstow Road is further restricted that units may only dig up to the edges of the two tank trails which parallel each side of the main road. Units may restrict movement along these MSRs during tactical operations by using concertina wire and mines. Restriction choke points will be clearly marked for day and night, (chem-lights on concertina at a minimum) with warning / check points signs clearly posted 300 meters either side of the checkpoint. While conducting digging activities/operations on Fort Irwin all personnel involved in these activities will comply with the following protocols for inadvertent discovery of cultural or paleontological resources.**

3. **Change in Soil Color / Composition. If you experience an abrupt change in soil color or soil texture, proceed cautiously. This may be an indication you have encountered some type of archaeological site.**

4. **Evidence of Human Activity. If you encounter bones or bone fragments, pottery shards or any type of woven material such as baskets or cloth, any type of arrowhead, spear point, or other tools or implements that appear to be handmade, any fossils or any metal objects or military paraphernalia while digging, stop your activities immediately and notify Range Control.**

5. **Light Guidance. For MRE Rotations: All vehicles will travel with headlights on at all times, unless conducting missions that require blackout conditions. White light is required on all MSRs and when operating within 500m of an MSR. White light is mandatory within one kilometer radius of all towns/villages and Forward Operating Bases (FOBs). METT-TC Dependent For DA Rotations: All tactical vehicles and contractors not serving as role players will turn off their headlights at the light line. Tactical vehicles will use blackout drive lights. Contractors within the scenario will use lights in accordance with their role and the tactical scenario. Tactical commanders may allow their formations to use white lights in populated areas for a limited time to mitigate risk as the situation dictates.**

6. **TCPs in Vicinity of Light Line. TCPs in vicinity of the light line on Barstow Road (MSR Bull Run) are prohibited within 500m of the light-line/Barstow Road intersection.**

1-17 Marking of Excavation Sites

1. **Rollover Prevention. Units will take the following measures to ensure that no rollovers are caused due to unfilled fighting positions:**

    a. **Marking Equipment. All combat vehicles carry as a part of their basic load survivability position marking material including a minimum of four U-shaped pickets, white engineer tape, and chem-lights.**

    b. **Proper Marking Materials. Combat vehicles must prove they have on hand proper vehicle fighting position marking materials, prior to start of digging. COEFOR / COB personnel will delay digging operations until this requirement is met.**

2. **Marking of Locations. Leaders must ensure personnel marking hasty or deliberate fighting positions have night vision capability before marking their Soldiers' position. Leaders can use luminous tape, infrared chemical lights or regular chemical lights to mark fighting positions to prevent fratricide based on unit SOP.**

    a. **Mounted Fighting Positions. All unoccupied survivability positions and excavations will be marked with a U-shaped picket at each of the four corners. White engineer tape will mark the two sides and the front edges leaving the entrance open. Chem-lights will be placed on all four pickets during limited visibility. Marking is not required for occupied Mounted fighting positions.**

    b. **Dismounted Individual Fighting Positions. Leaders must check all dismounted fighting positions for survivability and ensure positions are safe, ensuring the positions are not placed near vehicle perimeters and/or adjacent to an improved trail. All unoccupied survivability positions and excavations will be marked with a U-shaped picket, one at the front right and one at the front left of the dismounted fighting position. White engineer tape will mark the two sides and the front edges leaving the entrance open. Chem-lights will be placed on the pickets during limited visibility. Marking is required for occupied positions in limited visibility / hours of darkness. If dismounted fighting position will be used as a sleep area, refer to Chapter 13-9.**

3. **Tank Ditch Marking. Tank ditches will be marked with U-shaped pickets and white engineer tape along the entire length of the ditch (enemy side). During limited visibility, chem-lights will be placed a maximum of 25 meters along the enemy side of the tank ditch.**

4. **Pre-Dig Observer. The safety observer will inspect the proposed digging site for unexploded ordnance prior to the start of digging. All survivability positions will be recorded with a six digit grid coordinate and forwarded through the engineer and maneuver channels to the DTOC.**

5. **Safety Requirements and Restrictions during Excavation in Restricted Dig Areas.**

    a. **Protective Equipment. All personnel involved in digging operations that are not in a combat engineer vehicle or armored combat earth-mover (ACE) will wear eye protection, body armor, and ballistic helmet. Armored vehicles will remain hatches closed during digging operations.**

    b. **Safety Observer. A safety observer will be present, but in a safe location during all digging operations. The observer will receive EOD training on identification of unexploded ordnance.**

    c. **UXO Response. If unexploded ordnance is observed, all operations at that site will terminate until the area is cleared by either the rotational EOD unit or Fort Irwin EOD unit. Locations of UXOs uncovered during digging operations will be recorded by EOD for historical records. These records will be forwarded to Range Operations.**

    d. **Digging Equipment. The M9 ACE vehicle will be the primary vehicle allowed to dig fighting positions in units so equipped. Second choice of vehicle for digging is the combat engineer vehicle and/or a bulldozer.**

    e. **Safety Restriction. No digging at night or during electrical storms.**

1-18 Environmental Clean-Up Team (ECT)

1. **Purpose. The ECT white cell provides a means of rapidly responding to spills and other environmental situations without impacting on engineer support to the rotational unit. It is not part of the force structure and will not augment the rotational unit with survivability or battlefield restoration effort without specific approval from 52ID DTOC. ECT vehicles will display placards stating "ENVIRONMENTAL TEAM". The ECT will maintain continuous communications with Range Operations.**

2. **Procedures for Employment. The ECT will make runs as necessary to dispose of contaminated soil using the BLUFOR MSR. After coordinating with 52ID DTOC, Range Operations will dispatch the ECT for routine spills as required and will maintain in communication contact with the ECT. For large spills or spills with command interest, the ECT will (through range control) keep the DTOC informed of progress and projected completion times. Range Operations & ECT will maintain a log of reported and completed spills as required.**

3. **Involvement in Tactical Actions. The ECT will avoid entering areas where tactical actions are in progress to the extent possible. The ECT will not be dispatched to these areas without DTOC approval. If this is unavoidable, DTOC will assign escort responsibility to a specific OC/T team. If engaged during the conduct of a clean-up mission, the ECT will insert yellow keys and continue clean-up. At no time will the ECT actively participate in combat operations or attempt to influence tactical situations.**

Table 1-13 Figure 2 Restricted Dig Areas		
Center of Mass Grid Coordinates	Feature/Marking	Legend
NV1875033230 to NV1876532200 to NV1912329990 to NV1990629140 to NV1990627550 to NV1293527530 to NV1294128430 to NV1293529250 to NV1287033210	Gary Owen Area	Purple Dashed Line
NV4174720250 to NV4558320100 to NV4454114850 to NV4256513230 to NV4109113250 to NV3970814900 to NV3977817400 to NV3983519340 to NV3984220250	Lucky Fuse Area	Purple Dashed Line
NU4746897210 to NU5003694550 to NU4200486950 to NU3668886930 to NU3663192000 to NU4460697190	Langford Lake Area	Purple Dashed Line
NV2744320274 to NV3474620195 to NV3474619031 to NV3048615617	Nelson Lake Area	Purple Dashed Line
NV1652200000 to NU1692599908 to NU1752099422 to NU1769399019 to NU1765598379 to NU1754097989 to NU1736797694 to NU1698997234 to NU1650996882	Barbed Wire and Seibert Stakes Plant Line	Red Line
NU1648996567 to NU2323690000 to NU4683790000 to NU4744690773 to NU4821390985 to NU4892792810 to NU5025092810 to NU5025091911 to NU4866391884 to NU4868988656 to NU4710288577 to NU4710287042 to NU3419087069 to NU2617387069 to NU2612088577 to NU2291988603 to	Barbed Wire Seibert Stakes Signs posted 250m North of fence line Tortoise Line	Red Line
NV4573842740 to NV4573833240 to NV0667633210 to NV0674942610	Signs	Red Line

Table 1-13 Figure 2 Restricted Dig Areas		
Center of Mass Grid Coordinates	**Feature/Marking**	**Legend**
NV3400004000 - center mass	Bicycle Lakebed	Red Line
NU2876798993 to NU2946598089 to NU2846997225 to NU2775698160	ASP – Contact ASP	Red Line
NV2073819915 to NV2252519910 to NV2251419712 to NV2222219734 to NV2221715673 to NV2170019690 to NV2168319552 to NV2146319563 to NV2146919706 to NV2090319734 to NV2088119783 to NV2071019789	Nelson Airfield	Red Dotted Line
NV5808505017 to NV5951906000 to NV5964505800 to NV5821804800	Red Pass Lake Airfield	Red Dotted Line
NV4539331190 to NV4599731700 to NV4898431720 to NV4897631210 to NV4998431210 to NV5000730240 to NV5012230000 to NV5059629580 to NV5064129530 to NV5087129060 to NV5097028720 to NV5098528360 to NV4964827540 to NV4941927530 to NV4925127500 to NV4902227540 to	Wire and Seibert Stakes	Red Dotted Line
NV5299029200 to NV5301928230 to NV5389127210 to NV5463827210 to NV5442626220 to NV5389826240 to NV5389126660 to NV5298326990 to NV5269726990 to NV5209629180	Wire and Seibert Stakes	Red Dotted Line
NV2892208170 to NV2900308200 to NV2927008170 to NV2939608210 to NV2947708170 to NV2958407930 to NV2978607760 to NV2987007630 to NV2992007320 to NV2991207190 to NV2982407090 to NV2964507090 to NV2954507150 to NV2949607300 to NV2946507490 to NV2941207630 to	Wire and Seibert Stakes	Red Dotted Line
NV1348012610 to NV1359812500 to NV1361812490 to NV1370212390 to NV1371212270 to NV1356112310 to NV1342212420 to NV1338012550 to NV1342612620	Wire and Seibert Stakes	Red Dotted Line
NV1500331000 to NV1800531000 to NV1800529990 to NV1500329990	Wire and Seibert Stakes	Red Dotted Line
NU4963597870 to NU4969397760 to NU4967597600 to NV4962974800 to NU4959097030 to NU4951196910 to NU4939396870 to NU4929396900 to NU4920097080 to NU4919797370 to NU4927897600 to NU4937597800 to NU4952997880	Wire and Seibert Stakes	Red Dotted Line

Table 1-13 Figure 2 Restricted Dig Areas		
Center of Mass Grid Coordinates	**Feature/Marking**	**Legend**
NU3253698580 to NU3246898570 to NU3224998610 to NU3209898650 to NU3194898800 to NU3177098980 to NU3155199120 to NU3137399270 to NU3138699390 to NU3153799470 to NU3187999450 to NU3213999200 to NU3249598870 to NU3263298710	Wire and Seibert Stakes	Red Dotted Line
NU3515193790 to NU3519293700 to NU3521993520 to NU3519293310 to NU3501493260 to NU3495993350 to NU3489193520 to NU3491893680 to NU3504193820	Wire and Seibert Stakes	Red Dotted Line
NV5698503730 to NV5712203760 to NV5727203770 to NV5738203790 to NV5740903740 to NV5738203690 to NV5723103620 to NV5706703590 to NV5697103590 to NV5693003690	Wire and Seibert Stakes	Red Dotted Line

Table 1-13 Figure 1 No Dig Areas		
Center of Mass Grid Coordinates	Feature/Marking	Legend
NV2458624904 to NV3077724904 to NV3474621915 to NV2744320274 to NV3474620195	Nelson Lake	Purple Line
NV1012212966	DERA	Purple Line
NV1873806852	DERA	Purple Line
NV3050602839	DERA	Purple Line
NV3053002522	DERA	Purple Line
NV5070912739	Concrete Barriers	Purple Line
NV5820002040 - center mass	Red Pass Lakebed	Purple Line
NV3420095500 - center mass	Langford Lakebed	Purple Line
NU3126998278 to NU3214497208 to NU3093296669 to NU3070797574 to NU3090898118	None	Purple Line
NV5647724044 to NV5651324066 to NV5652324003 to NV5654924033	Arrowhead	Purple Line

CHAPTER 2 – INTELLIGENCE

1. **OVERVIEW. The National Training Center provides brigades with as complete a spectrum of intelligence capabilities and connectivity as is possible consistent with current doctrine and systems availability. The 52ID headquarters replicates higher control and access to echelons above brigade information collection assets and intelligence. The training area replicates a complex operational environment that allows rotational units to exercise all of their organic general and technical information collection systems. This chapter outlines exercise procedures for intelligence.**

2-1 Intelligence Architecture

1. **DCGS-A. Rotational units and DTACs must bring and utilize their organic DCGS-A IFS stacks and BALS. DCGS-A systems must be IA compliant, loaded with MacAfee Antivirus, and be on the most current version of DCGS-software, which is version 7.3. Enabler units that do not have DCGS-A will be issued a BAL as coordinated through the Warrior G2 in BLDG 990. Brigade S2 Systems Warrant (350T) or NCO(35T) and DCGS-A FSE and Mentor conduct link up with NTC DCGS-A systems integrators, FSE and Mentor on RSOI 1 in order to identify systems connectivity requirements, confirm the RTU DCGS-A systems configuration, and begin to establish connectivity. During this time, the BDE S2, DCGS-A FSE, Mentor and Systems maintainers will receive the NTC DCGS-A checklist and troubleshooting guide for dissemination to the BN level. During the Mission Command Validation Exercise (MCVE) on RSOI 3, the BDE S2 must build a complete set of graphics saved in an overlay/shape file and then create an advertisement for publication/subscription to the 52ID through the DDS data bridge. Interoperability between DCGS-A and CPOF and other ABCS systems will also be tested during the MCVE.**

2-2 Echelon Above Brigade Asset Employment

1. **Higher Headquarters Integration**

    a. **Command and Control. Division headquarters elements (DISE, DTAC, or DMAIN) or any other elements may deploy to NTC to participate in a brigade rotation. In principle, HQ elements act as an extension of the 52ID DTOC, relaying information to/from the RTU which would come to 52ID directly in the absence of the deployed HQ. HQ elements which deploy to the NTC, will configure in one of three ways: 1) integrated into the 52ID DTOC (inside or in the vicinity of Bldg 990), as a HQ element in the cantonment area, or as a competitive element in the training area. Unless otherwise directed, HQ elements will operate in the follow manner: An element in the 52ID DTOC will integrate into the 52ID HQ, report to and work for the Warrior staff,**

receive both EXCON and HICON information, and gain approval by 52ID HQ prior to dissemination of any intelligence products/information. A HQ element in the cantonment area will maintain its own internal structure, report to the Warrior staff in accordance with its HQ function, receive HICON information, and gain approval by 52ID HQ prior to dissemination of any intelligence products/information. A HQ element in the training area will be competitive, maintain its own internal structure, report to Warrior staff based on the rotational order, only receive appropriate scenario information, and produce and disseminate its own products. See DTOC SOP for additional requirements.

b. EAB Asset Communication. Unless otherwise directed by 52ID order, all information collected by echelon above brigade assets will be routed through 52ID to the RTU and other subordinate units. SIGINT information is routed through INSCOM Foundry at NTC. The G2 will evaluate this information, and based on the scenario, hold, modify, or disseminate the information to the brigade S2 and other divisional GS assets, e.g. Fires Brigade S2. In some cases information within the rotational brigades Area of Operations (AO) may be carbon copied to the brigade or other RTU when forwarded to 52ID.

c. EAB Asset Request Process. Rotational unit requests aerial ISR assets in conjunction with the Division ISR Synch Meeting conducted 1600 daily. Requests must be submitted by 1700 for execution beginning 0001 two calendar days later (NLT 1700 3 MAY for execution beginning 0001 5 MAY). Assets not already listed under division control must be requested NLT 1700 for execution beginning 0001 four calendar days later (NLT 1700 3 MAY for execution beginning 0001 7 MAY) in order to meet the ATO cycle.

2. Simulated Intelligence Assets. NTC replicates some ISR assets with simulations. Simulated aerial assets will be listed in the 52ID collection plan. Live and simulated assets aerial are requested the same way, IAW 52ID SOP and section 2-2, 1, C above. Simulated FMV assets are not typically approved for RTU use inside the Fort Irwin training area.

a. Simulated UAS. 52ID flies the following simulated UAS: RQ-5 Hunter, RQ-X Predator, XX-X Grey Eagle.

b. Mission Length. Mission length of each intelligence asset will be calculated from the L/R site and/or the supporting air base for EAB assets each day. For planning and execution of simulated UAS flights the following timelines will be used: RQ-5 Hunter—8 hours. RQ-X Predator—Y hours. XX-X Grey Eagle—Z hours. On station time is flight time minus ascent/decent and travel time to/from L/R site. 52ID has 8 simulated FMC UAS of each type for ISR operations, or the number listed in 52ID OPORD.

c. Dynamic Retasking. RTU must submit an 8 line request for dyamic retasking of simulated and live UAS to 52ID for approval-AC. In order to ensure Division Airspace is maintained IAW procedural requirements, all AC measures will be forwarded to Division AC planning cell by 1000 hours local the day prior to execution. Simulated and live assets are treated equally—AC measures for both simulated and live systems must be maintained and may not overlap.

d. Flight Profile. The Division UAS will fly between 6000 and 8000 feet MSL.

e. Controlled Resupply Rates. UASs destroyed by enemy ADA, crashing due to lack of fuel, loss of power, or lost due to weather will be resupplied at the rate of 1 UAS every 48 hours. Damaged or destroyed UASs will shut down the video feed immediately and return to the L/R ROZ. Upon completion of a 30 minute ascent replication for the UAS on strip alert, the UAS will reestablish its video link and proceed to the target area. All supply requests must be completed IAW NTC Exercise Operating Procedures (EXOP) to ensure timely resupply.

f. Weather Limitations. Simulated UAS may not fly when live UAS are restricted due to weather.

g. Launch and Recovery. If there is a launch and recovery site for either live or simulated UAS within the rotational units AO, it must be secured in order to fly a UAS. In addition, all AC2 and ATC procedural requirements must be in place prior to launch.

3. Simulated National Collection Systems. 52ID may replicate GEOINT and SIGINT products within the 52nd ID AO. SIGINT Systems will provide limited ELINT and COMINT coverage in the Division area of operations in the form of an INTREP/TACREP. Reports may also be generated based on JCATS, WIM, and SIMPLE simulations software and disseminated via Jabber or DCGS.

4. Live Intelligence Assets. Grey Eagle Command and Control. Grey Eagle is a division asset. Grey Eagle will be allocated in accordance with 52ID orders and collection plan. Units allocated control of a Grey Eagle UAS will communicate with the ground control station via Jabber or FM.

5. Long Range Surveillance Detachment (LRSD). Command and Control. When authorized as part of the scenario, LRSD and other echelon above brigade assets will deploy under 52ID DTOC control unless otherwise directed in division orders. The 52ID DTOC is the only agency authorized to pass RSTA reports/information to the Brigade S2. The Brigade S2 can, however, submit RFIs or IR to the G2, who may task the LRSD to satisfy the Brigade's IR.

2-3 Electronic Warfare

1. Safety. EW command elements will continuously monitor STOP BUZZER, frequency FM 41.95, during times when jamming operations are conducted, and cease operation immediately if so directed. All ICD/jamming will cease during air MEDEVAC operations.

2. Restrictions. EW assets will adhere to the No-Jam and No-Collect frequency lists published prior to each rotation. Frequency management at the NTC is closely regulated to ensure training objectives are met while preventing infractions of Federal, State, and Local regulations. The restrictions below will be followed during all rotational exercises (these lists are provided to the rotational unit upon arrival at the NTC).

3. Restricted Frequency Lists. The lists described below are maintained by NTC Frequency Management. Restricted Frequencies are broken into separate listings with specific limitations as shown below:

a. List 1 and 2 are Permanent Status 0 (no-jam/no-intercept/no collect). They are labeled Permanent Status 0 and 02.

b. List 3 is a Rotational Status 0 (no-jam/no-intercept/no-collect) list. The frequencies in lists 1 through 3 are strictly off limits to COEFOR/BLUFOR at all times.

c. List 4 and 5 are respectively the 50 and 1500 watt restricted jamming lists. Collection operations are authorized against frequencies on these lists at all times.

d. List 6 is the CT-OISset to CT-OISrise restricted jamming list. Even though collection operations are authorized against frequencies on this list at all times, jamming is only authorized while the CT-OIS is above the horizon. Ranges increase during the hours of darkness and interfere with civilian and other nearby military forms of communication.

6. Unrestricted Frequencies. All other frequencies not covered by the above mentioned lists are targetable for collection and jamming operations at all times.

7. **EW Asset Out Of Sector Positioning. Authority. The 52ID will be the approving authority for the placement of EW systems outside the unit's sector or zone. To simulate battlefield effects for EW systems deployed outside of the unit's area of operation, one EW team, deployed outside the AO will be destroyed for every two EW teams destroyed by engagements with the enemy in sector/zone.**

8. **EW Reporting Requirements. In addition to unit SOP reporting requirements, the MICO/S2 will provide a resource status report (RSR) to the G2/G3 upon system status changes or at least once daily. RSRs will include asset operational status and location. The MICO/S2 will provide a copy of its collection and jamming matrix to the DTOC prior to the LD time of each mission. This matrix will reflect EA/ES priorities based on the Division OPORD.**

    a. **Jammers. Jammers may be employed on the battlefield at the NTC under the following conditions (subject to approval IAW FORSCOM REG 350-50-1, Request for Exceptions):**

        i. **Jammers will not be emplaced or used within a 1 KM radius of the following grids:**
            1. **An OC/T (Sidewinder 11 or representative) will be notified in advance of emplacement and accompany player personnel deploying the Jam units.**
            2. **An OC/T must be positioned in proximity to all employed and operational Jammers. This is to allow the OC/T to shut down the units quickly should the need arise. This is for safety purposes only; the OC/T in no way will assume responsibility for damage control or property accountability of jamming units.**
            3. **Voice intercept and communications deception operations will only be conducted by personnel possessing the 35 series SIGINT MOS and duty position. This restriction applies to both BLUFOR and COEFOR units.**
            4. **Soldiers outside of the 35 series SIGINT MOS that discover what they believe to be an enemy frequency are authorized to pass that frequency on to their higher command post that, in turn, may pass it to the appropriate MI command post.**
            5. **Electronic attack (jamming) operations will only be performed if under the direct control of an MI headquarters. This is to ensure that all no-jam restrictions are observed.**
            6. **At no time will SINGARS radios or other communications equipment be used to conduct Intrusive Communication Deception (ICD), jamming or other EW operations. Examples include: using 'off the shelf' scanners such as those purchased from local electronic stores to scan with, or the use of SINGARS to jam a COEFOR net.**

9. **EW Operations Against TACAIR.**

    a. **Restrictions. Communications jamming/deception may be employed in all Force-on-Force areas of the NTC on both Blue and Red TACAIR. Only Raven OC/Ts will participate in intrusion and deception activities. Intrusion and deception attempts may not be real-world call signs (i.e., CT-OISdance or Fort Irwin range Control). No bogus real-world call signs or station identifications will be used. Jamming is prohibited on safeguard frequencies. Have-Quick equipment and procedures may be used if all players are Have-Quick equipped. Safety is of paramount importance. A safety call to terminate jamming will be made by an aircrew member, FAC, or controlling agency to terminate comm-jam whenever a hazard is imminent or an emergency is in progress. All electronic jamming and all intrusion/deception activity will be terminated when safety, Stop Buzzer, or cease jam is transmitted on FM frequency 41.95 MHz, UHF guard frequency 243.0 MHZ, or VHF guard frequency 121.5 MHZ.**

b. Procedures. Pre-mission briefings, coordination and mission planning will include Chattermark and Brevity Code procedures. Additionally, the FAC/Fighter briefing at the Contact Point (CP) will include Chattermark procedures. A jam-free rendezvous frequency will be designated and briefed to all participants. This frequency will be used only to establish communications if radio contact is lost. When Have-Quick is to be used, any changes will be published in the "GREEN FLAG-West Quarterly" and "Weekly SPINS". Team Raven personnel will brief Have-Quick procedures to all participants. There are four BLUFOR UHF strike frequencies allocated for Force-on-Force battles. Three of these frequencies may be jammed during any one CAS mission. The COEFOR TACP has three allocated UHF frequencies, any two of which may be jammed for any one CAS mission. There are two FM strike frequencies available for the Blue TACPs and two for the COEFOR TACPs. One of these frequencies may be jammed per mission for each force. Airborne jammers are authorized with prior detailed coordination between Operations Group (Lizard Plans) and GREEN FLAG-West.

10. UAS Employment

a. Scope/Applicability. The requirements, limitations, and restrictions listed in the chapter are applicable to all player units, personnel (COEFOR, BLUEFOR, Support, and Control), contractors, and government civilians throughout the rotational exercise period regardless of the type of unit, state of training, level of command, identified training objectives, or the training scenario. It is applicable to all personnel who participate in, support, observe, or control rotational unit training at the NTC. It is applicable to all UAS systems at the NTC. Requests for exceptions will be directed to the Commander, NTC Operations Group, or his designated representatives.

b. Weather Limitations. All UAS operations must adhere to the specific weather limitations outlined in the UAS operations manual and AR 95-23 (UAS Flight Regulations). This includes but is not limited to winds, precipitation, icing, turbulence and cloud cover. All UAS will return to the Launch and Recovery Site, if published Weather Advisories/Warnings prevent safe, normal operations of the UAS IAW the UAS operations manual or AR 95-23.

c. Airspace Control (AC) Cell. The AC Cell in conjunction with the Chief of Intelligence (W2) in the DTOC is the central point of contact for all Live, constructive and virtual UAS operations/issues at FT Irwin.

d. UAS ACMRs shall be submitted by 1000L the day prior to execution to the AC Cell, whom is the approving authority for all airspace control measures for live, constructive, and virtual UAS operations. At a minimum the brigade S3 Air is responsible for submitting the following information: 1) POC for the requesting unit, 2) Requesting unit call sign and frequency, 3) Control measure dimensions with grid, 4) DTG for ACMR, and 5) Task and Purpose. All UAS operations will be published in the Air Tasking Order (ATO) and Airspace Coordination Order (ACO) and comply with the NTC Aviation Procedure Guide (APG) and all Special Instructions (SPINS). The ACO is published at 1800 hours daily.

e. Any UAS request submitted after 1000L will be considered an immediate request.

f. All AC and ATC procedural requirements must be in place prior to launch. UAS operators will maintain radio communications with Desert Radio and/or Air Traffic Control personnel and report IAW established AC measures. If radio communications is not established by the unit, the OC/T must contact Desert Radio to ensure procedural control is maintained to coordinate local airspace. RTU PACE (Primary, Alternate, Contingency, Emergency) plan must include the NTC-authorized field phone.

g. All Aircraft Operators (AOs) must receive the NTC G3 Safety briefing and the AC2 Weather briefing prior to conducting any tactical operations.

h. Operating altitudes for all Live, constructive and virtual UAS will be directed by division in orders to the rotational unit or directed by the division ACA on a case by case basis.

i. Asset Baselines. The unit must allocate its UAS resources to reflect what is available and fully mission capable.

j. UASs operate without MILES. Engagements are manually assessed by OC/Ts on the ground based upon parameters developed by the ADA Center. (See section 3.)

k. Spectrum Management. The rotational unit must coordinate for the use of approved frequencies prior to any UAS flight operations at the NTC IAW the 120 day letter.

l. Additionally, the requested frequencies must be coordinated and emitters tested prior to flight operations. UAS will not operate until this is complete.

m. If the UAS asset is controlled and maintained above the BDE level, the Division G2 is the controlling authority for all UAS operations.

n. While in Direct Support of the Brigade, UAS information collection is restricted to within the rotational unit BCT boundary. Requests to collect outside of approved ACM or/and BCT boundary by the BCT must be processed through the Division G2/AC2 for approval. Dynamic re-tasking is possible provided the re-tasking does not cause the UAS to depart the BCT AO without the proper approval as stated above.

1. Flight Operations. UAS flight operations will be conducted IAW AR 95-23, *Unmanned Aircraft System Flight Regulations*, Federal Aviation Administration (FAA) Order 7610.4J, *Special Military Operations*, and Department of Transportation FAA *Certificate of Waiver or Authorization.* The Division G3/AC must be notified prior to all UAS launches in support of flight operations.

a. Minimal Lighting: Shadows may operate in the BDE AO in approved ACMs or within active R-2502 North and East with IR position and / or IR anti-collision light (strobe) on and visible lighting off between official CT-OISset and CT-OISrise when flying above the CA. If not modified for IR lighting, minimum lighting is position lights on and anti-collision light (strobe) off when flying above the CA. Between CT-OISrise and CT-OISset Shadows will operate with visible (non IR) anti-collision light (strobe) on while flying above the CA. Shadows shall maintain visible (non IR) position lighting and strobe on at all times while flying in R-2502 airspace below the CA.

b. Blackout operations may be requested through the Division Aviation Officer in writing 24 hours prior to execution. Approval is based on the unit training level and appropriate risk management procedures completed.

2. Engaging UAS. The OC/Ts on the ground and the AC (Airspace Control) (Warrior 16) will adjudicate all air defense (AD) engagements against UAS systems. Once the UAS air vehicle (AV) is acquired, it is subject to engagement using the process described below. AD weapon system status, AD weapons location, distance to target, AV altitude, and environmental conditions (day/night, illumination, ceiling, etc.) will be considered when making assessments. A probability kill (PK) table accounting for the capabilities and limitations of all UASs will be maintained and utilized by the Air Defense Control Cell to adjudicate all engagements. BLUFOR and COEFOR RAVEN UAS, as well as any participating surrogate UAS are also subject to these rules.

a. Engagement Sequence. The AD engagement sequence against UASs consists of the following phases:

i. **Detection: Detection method must be OC/T verified as visual and/or aural for both BLUFOR and COEFOR AD gun/MANPAD systems. Radar acquisition must be live for BLUFOR, and live or constructive for COEFOR.**

ii. **Acquisition: All gun systems used in an AD role, MANPADS, and EO/IR SAMs, must "see" and positively identify the target for acquisition. This makes night acquisition extremely difficult. Although high percentage illumination at night increases the chance of detection, acquisition and engagement success drops under these conditions. Given the small radar cross-section and radar absorbing profile of Army tactical UAS, no external radar tracks on these aircraft will be disseminated to the either BLUFOR or COEFOR through an early warning net. Radar acquisition must be accomplished with real-world systems operational in the box.**

iii. **Air Engagement: After successful acquisition, the designated AD system may engage the UAS.**

b. **Ground engagements. Air vehicles (AVs) engaged on the ground, by any system, is deemed non-mission capable (NMC). UAS engaged by any system other than small arms are deemed "destroyed." If qualified maintenance personnel are available, UAS engaged by small arms will remain NMC for a minimum of 24 hours (this is the minimum time required for curing of any composite repair). If a UAS is "in flight" and the controlling GCS and personnel are engaged and assessed, the UAS payload is turned off and the controlling GCS is permitted to either immediately land the UAS or conduct a hand-off to the Launch/Recovery Site (LRS) GCS for landing. If the forward GCS is "in control" and assessed and the UAS is not within LOS of the LRS GCS, the UAS is considered lost (destroyed). The lost/destroyed UAS will then be immediately handed off to the LRS GCS for landing. If the LRS GCS is "in control" and assessed the crew is permitted to recover the UAS through the landing sequence before the adjudication becomes effective. The UAS is considered lost (destroyed). The systems (UAS and GCS) will remain inoperative until equipment is repaired or replaced. If the aircraft has excess fuel remaining, the UAS will return to the LRS and loiter for 30 minutes with the payload in the stowed position.**

c. **Assessment: The standards outlined below must be adhered to prior to assessing any engagement.**

d. **If the UAS was in the general vicinity given by the AD team and within range of the AD system, validated by the OC/T, the engagement is valid and will be adjudicated.**

e. **Upon a valid engagement, damage will be assessed by the DTOC (Warrior 16) through OC/Ts. A "successful" engagement means that the UAS is destroyed. If the engagement is unsuccessful, the AD weapon system may continue to engage given that the UAS remains within range, ammunition exists, and reload / reacquisition times are adhered to.**

3. **Engagement Completion. Once the adjudication process is complete and the UAS is destroyed, the OC/T at the Ground Control Station will notify the mission commander/Aircraft Commander (AC) of the adjudication results.**

4. **The Mission Coordinator will immediately place the payload in "stow mode" and/or cease/limit payload operations to ensure no information can be collected. Also, if applicable, discontinue remote video terminal (RVT) mode and place the AV antenna in directional mode, and if operating a Communication Relay Package (CRP), that capability will be terminated. The Aircraft Commander, additionally, will turn on all AV lights, direct the AV to a predetermined intermediate point (IP) (usually the Launch/Recovery ROZ) and place it in loiter.**

a. **To save wear and tear on the systems during both the launch and recovery sequences, the UAS is permitted to loiter at the designated IP for 30 minutes (if a UAS is on strip alert) and one hour (if not on strip alert) prior to conducting further collection for the BCT.**

b. RAVEN UAS. The UAS must immediately return to the LRS and land. No further collection or SPOT reports can be filed by the crew.

5. UAS Replacements.

a. Shadow UAS.

i. Direct Support. When the MICO is in direct support of a brigade, the brigade commander (or his designate) may make the decision to launch a replacement UAS. A replacement UAS may begin collecting one half hour after the shoot down. Brigade commanders are limited to the number of fully mission capable (FMC) aircraft on hand.

ii. Organic Assets. Brigade Commanders who bring an organic UAS capability to NTC are limited to the number of fully mission capable (FMC) air vehicles actually on hand; however, if the Brigade is receiving General Support from a Division UAS, they are limited by asset availability throughout the 52ID AO. Real-World weather advisories, watches and warning apply to Division and Higher constructed UAS.

b. Other UAS systems. After a successful engagement, operators will follow the same procedure listed above. Replacement time will be based on the average time to prepare, launch, and fly another AV to the target area (not less than 30 minutes). Systems for which sufficient data does not exist to determine this "average" time will return to base, land, and re-launch IAW all established procedures for that system. RAVENs are not subject to this restriction. Once the RAVEN that was shot down has landed, the unit may launch the replacement RAVEN.

6. UAS Personnel. UAS operators are subject to Fighter Management, as per AR 95-23. Unit Commanders will establish specific requirements for their personnel. Safety of personnel and equipment (both the UAS unit's and those on the ground under or near the UAS) is the paramount consideration. UAS personnel who become casualties will be assessed IAW the EXOP. See paragraph (9)(d) for "in-flight" personnel assessment procedures.

7. Ground Equipment. Due to nature of the electronic emissions from UAS control stations and antennas they may operate without MILES.

a. Control Stations. Vehicles will be assessed IAW the appropriate sections of the EXOP. A control shelter will remain FMC if only the prime mover is damaged, but may not be moved until repairs are affected. Due to the nature of the electronics on board, a control station is considered "destroyed" when the assessment determines an engagement involved any part of the control shelter. Replacements for "Destroyed" equipment must be requisitioned. Replacements will be put in service 12 hours after a proper request has been processed through CSS channels. See paragraph (9)(d) for "in-flight" ground equipment assessment procedures.

b. Antennas. Antennas engaged, by any system, are deemed NMC. Antennas engaged by any system other than small arms are deemed "destroyed". NMC antennas may be "repaired" in 1 hour, if qualified maintenance personnel and parts are available. Replacements for "destroyed" antennas must be requisitioned. Replacements will be put in service 12 hours after a proper request has been processed through CSS.

c. If duplicate or replacement equipment exists within the Brigade AO the commander may relocate that equipment. Actual or surrogate equipment must be moved on the battlefield to attain FMC status.

8. **UAS Safety. In case of a real-world UAS mishap, the UAS Platoon Leader (CW3) or Operations Technician (CW2) will immediately take actions necessary to protect personnel and equipment, secure all shelters, the mishap scene, and notify their Chain of Command and their Observer Controller/Trainer (OC/T). The OC/T will direct all further notifications. Emergency response and the mishap investigation will be conducted IAW AR 385-40 and any applicable FT Irwin Regulations. UASs, by their nature, represent a unique hazard. The composite material of the fuselage produces toxic fumes while burning. The possibility of fire is always present during and after a UAS mishap. Additionally, many UAS systems include various pyrotechnic or explosive devices, therefore, anyone coming upon a downed UAS should do the following: 1) Stay upwind at a safe distance. Do not attempt to extinguish any fire, unless it poses an immediate hazard to life or limb (remain upwind while fighting the fire). Keep all others upwind and at a safe distance. Notify the DTOC/COG thru OC/T chain for SIR procedures. Secure the scene. Evacuate all personnel upwind of the site. Do not approach the aircraft. Do not disturb any debris.**

2-5 Signals Intelligence (SIGINT)

1. **Overview. The National Training Center provides a robust signal environment for rotational units to employ SIGINT capabilities. While scenario information is generally unclassified, all personnel are responsible for protecting capabilities, sources, and methods of SIGINT operations at the appropriate classification level. (SECRET or TOP SECRET).**

2. **NTC Project Foundry Office. Foundry will have intelligence oversight over SIGINT operations in the training area. Foundry will act as the 52ID SIGINT section to exercise HICON of RTU SIGINT personnel where necessary in accordance with 52ID orders. NTC SIGINT OC/Ts Responsibilities. NTC SIGINT OC/Ts will maintain oversight of SIGINT operations to facilitate protection of capabilities and methods and coach and mentor units on current TTPs.**

3. **RTU Responsibilities. The BCTs are responsible for the overall execution of SIGINT operations for the BCT. The BCT is responsible for maintaining OPSEC and accountability of all associated equipment. They must complete all required training and certification of eligible personnel, proper and legal employment of equipment, and overall security of classified equipment and information. The BCT will exercise command and control of attached and organic SIGINT teams and will determine allocations, command, and support relationships of their teams.**

4. **Equipment Maintenance and Security. Equipment operators are responsible for accountability, basic maintenance and conducting PMCS (Preventative Maintenance Checks and Services) of all SIGINT equipment IAW the systems operator's manual. Pre-combat inspections of personnel and equipment are the responsibility of the senior member of the team and will be conducted prior to every mission. Post mission maintenance, accountability and security inspections will be conducted immediately following each mission and prior to storing the system in the assigned secure area or Sensitive Compartmented Information Facility (SCIF).**

5. **OPSEC.**
    a. **Spillage. It is the BCT's responsibility to guard against spillage and make all efforts to control classified information. If spillage occurs, the BCT will report it and conduct immediate steps to contain it. For STG operations, the driver, TC, and gunner in the STG vehicle must possess valid and current TS//SCI clearances and sign non-disclosure agreements. All STG traffic, reports, working aids and other NTC generated STG material must be handled and disseminated IAW appropriate USSIDs. Units must leverage their SOPs concerning physical security measures. Material must be marked at the appropriate classification.**

    b. **Prevention of System Compromise. Role players, COEFOR personnel, and exercise support personnel, which the targeted person will be US military or civilian with a TS/SCI clearance, and will not compromise STG operations. If a SIGINT team identifies a risk of compromise, it will cease operations until the situation is handled appropriately and will**

restart operations only after SIGINT OC/Ts state the area is clear of possible compromise. NTC will not record STG operations.

6. **COEFOR Interdiction and SIGINT Casualties. COEFOR Soldiers may not capture, shut down, enter, search, or tamper with SIGINT systems or vehicles, to include dismounted equipment or the vehicle powering the equipment. The SIGINT OC/T will assess the system BDA card. The SIGINT OC/T will then tell the operator to take appropriate actions.**

7. **Search Restrictions. Only SIGINT OC/Ts may inspect SIGINT vehicles and equipment nominated by COEFOR for search. No personnel without a security clearance are permitted in or around the SIGINT vehicle or equipment at any time.**

8. **SIGINT Terminal Guidance Training. The STG Concept of Operations is classified SECRET. It is on file at the NTC Project Foundry office and is briefed to rotational units. The BCT will coordinate for any desired STG training at NTC during the D-180 conference. The NTC Intelligence Plans Team will identify the requirements for subsequent coordination by plans and the NTC Project Foundry office. The inbound BCT is responsible for ensuring all designated operators complete certification prior to arrival at NTC. Only those certified IAW with the 742nd MI BN or local Project Foundry office, as having completed this training can operate STG systems at NTC. The certification must be accomplished prior to any operations at NTC. The rotational unit is responsible for providing proof of training prior to arrival at NTC. With prior coordination, the NTC Project Foundry team will facilitate coordination of training and certification.**

2-6 Human Intelligence (HUMINT)

1. **HUMINT Collection Teams (HCT).Priority of focus and tasks is deferred to the rotational unit command. However, typical prioritization differs between Mission Rehearsal Exercises (MRXs) and Decisive Action scenarios. Priority of focus and tasks during Decisive Action rotations include: tactical questioning, screening, Detainee/EPW Screening and Interrogations, Internally Displaced Persons (IDP)/Defector debriefings, document and media exploitation (DOCEX/DOMEX), and tactical and sensitive site exploitation (TSE/SSE). During Mission Rehearsal Exercises, the focus may shift to military source operations (MSO), liaison, and tagging, tracking and locating (TTL) operations.**

2. **Military Source Operations will be conducted IAW unit SOP, 52ID Orders, FM 2-22.3 and AR 381-100 (S//NF). Designated HUMINT Collection Teams (HCT) will conduct MSO IAW with scenario when directed to do so by the RTU. In MRX scenarios, MSO will be conducted IAW the appropriate theater policy regarding special certification of collectors. During DATE rotations, limited MSO will be conducted IAW Army policy and 52ID order. Intelligence Contingency Funds may be available for issue from 52ID G2X.**

3. **NTC HUMINT OC/T Responsibilities. NTC HUMINT OC/Ts will maintain oversight of HUMINT operations at Fort Irwin to facilitate protection of capabilities and methods and coach and mentor units on current TTPs. The BCTs are responsible for the overall execution of HCT operations for the BCT. An OC/T must be present for all interrogations. OC/T will only exercise command and control over training elements for safety reasons if witnessing an unsafe act or to prevent injury or death.**

4. **NTC RTU Responsibility. The BCT is responsible for maintaining OPSEC and INFOSEC of HUMINT operations as well as accountability of all associated personnel and equipment. They must maintain overall security of classified equipment and information. The BCT will exercise command and control of attached and organic HCT teams and will determine allocations, command, and support relationships of their teams.**

5. **HUMINT Collection Teams (HCT). Priority of effort.**

a. Military Source Operations (MSO). MSO is the primary focus for all HCTs and should supersede all other requirements of the HCT to include interrogations. Intelligence Contingency Funds (ICF) is available to HUMINT Collection Teams (HCT) when other funds are not available or authorized. These funds can be used to further the intelligence mission and maintain security of an operation. ICF is not useful as a weapons system and can result in negative consequences for US forces. While at the National Training Center, the Bronco Team (Brigade Staff Trainers) will issue ICF to the OMT.

b. Interrogations. The following guidelines must be followed regarding interrogations at the NTC: An OC/T must be present for all interrogations, TQ can only take place at or near the objective. TQ cannot take place after an individual has been taken into custody and removed from the objective area. The questioning of a detainee is by definition an interrogation.

6. Tactical Questioning. While Tactical Questioning (TQ) may be conducted by any Soldier, HUMINT Soldiers will frequently conduct unit training and supervise TQ operations. TQ will be performed IAW FM 2-91.6 Soldier Surveillance and Reconnaissance: Fundamentals of Tactical Information Collection dated 10 October 2007. A OC/T (MOS immaterial) will be present at all unit actions involving tactical questioning. FM 2-91.6 defines tactical questioning as the expedient initial questioning for information of immediate value. When the term applies to the interaction with the local population, it is not really questioning but is more conversational in nature. The task can be designed to build rapport as much as to collect information and understand the environment. The soldier conducts tactical questioning based on the unit's SOPs, ROE, and the order for that mission. Small unit leaders must include specific guidance for tactical questioning in the operations order (OPORD) for appropriate missions. The Brigade and Battalion S2s and S3s must provide appropriate specific guidance in the form of (special orders and requests [SORs]) down to company, troop, or battery level to help guide tactical questioning. This information that the soldier reports as a result of tactical questioning will be passed up the chain of command (some to the Battalion S2 and Brigade S2) and forms a vital part of planning and operations.

7. Questioning. Any Soldier may conduct Tactical Questioning but must adhere to the guidance provided in FM 2-91.6, unit orders, and unit SOP.

8. Restrictions. Tactical Questioning must occur on or near the objective/point of capture IAW FM 2-91.6 and 52ID policy for intelligence of immediate value and follow on targeting as per unit SOP and command guidance. Once an individual is processed as a detainee and removed from the objective/point of capture all TQ will cease. All detained persons must have ~~a~~ an OC/T present to be questioned. NOTE: Once a detainee is removed from the objective/point of capture, TQ ceases and interrogations begin. TQ cannot take place after an individual has been removed from the objective area. All questioning thereafter is an interrogation by definition. The only exception is a screening conducted by a 35M or 351M to identify individuals with information of immediate intelligence value in preparation for an interrogation. Only certified interrogators with enlisted MOS 35M or warrant officer MOS351M may interrogate!

2-6-1 Tactical Questioning

1. Tactical Questioning. Tactical questioning can provide critical information for situational understanding. Tactical questioning is the expedient initial questioning for information of immediate tactical value. This is distinguished from casual or routine interaction with the local population, as it is not really questioning. The soldier conducts tactical questioning based on the unit's standing operating procedures (SOPs), rules of engagement (ROE), and the order for that mission. S3s must provide appropriate specific guidance in the form of (special orders and requests [SORs]) down to company, troop, or battery level to help guide tactical questioning. This information that the soldier reports as a result of tactical questioning will be passed up the chain of command (some to the Battalion S2 and Brigade S2) and forms a vital part of planning and operations.

2. **Restrictions. An OC/T must be present for any detainee to be questioned. Questioning will occur IAW FM 2-91.6 (Soldier Surveillance And Reconnaissance: Fundamentals Of Tactical Information Collection, 10 OCT 2007.) and unit SOP/TTPs. NOTE: Once a detainee leaves the objective/point of capture TQ ceases and interrogations begin. Only trained interrogators in the enlisted MOS 35M and warrant officer MOS 351M may interrogate!**

2-6-2 Detainee Operations

1. **Overview. Detainees on the division "Detain, Suspect, Protect" (DSP) list must be reported immediately. Detainees are processed according to the Rotational ROE defined in the 52ID OPORD. These processing times and responsible agencies differ according to the NTC scenario for each rotation and processed to Division MP's within 24 hours from the time of detention. Brigades and MSCs have the implied task of executing the Division DSP list and are authorized their own internally refined DSP list. Brigade specific DSP lists will be forwarded to the 52ID G2 for review. Detainees on the Brigade DSP list will be reported to division as part of routine reports (SITREP, INTSUM, IIR, etc.) and transferred to Division within 24 hours. Exploitation of all detainees at the Brigade Interrogation Facility (BIF) and Detainee Holding Area by qualified HUMINT personnel (enlisted MOS 35M and Warrant Officer MOS 351M),will be conducted IAW FM FM 2-22.3 and all OC/T and Geneva Convention (FM 27-10) requirements discussed in paragraph 2-7 are in effect. A detainee is any person captured or otherwise detained by an armed force. Within the limits of the ROE and SOFAs, detained persons may be interrogated or questioned. They are frequently excellent sources of information and immediate access and exploitation by qualified HUMINT personnel is critical. The US HUMINT collector must remember that, regardless of the legal position of the detainee, they must be treated in accordance with the appropriate Geneva Convention. Interrogators may request a 24 hour extension to have the MPs hold an EPW/Detainee for up to a maximum of 48 hours for further questioning.**

2. **Evidence Collection. Proper evidence collection as part of detainee operations is critical to successful prosecution of indigenous suspects associated with anti-US/Coalition activities, including terrorism, in local courts. Evidence collection should be performed as part of detainee operations (Raid, Cordon & Search) and should include a thorough search for evidence and photographs - on location and at time of detention - of the individual(s) with the evidence (contraband, illegal weapons, IED making materials, etc.). Evidence collection will be conducted IAW ROE / SOFA and applicable regulations. A minimum of one OC/T is required to cover down on the operation. Legal and HUMINT OC/T coverage is recommended to ensure the activity conforms to ROE/SOFA and Geneva Convention requirements.**

3. **Tactical/Sensitive Site Exploitation. Proper evidence collection as part of HCT operations is critical to successful prosecution of indigenous suspects associated with anti-US/Coalition activities, including terrorism, in local courts. Evidence collection should be performed as part of HCT operations ISO of, but not limited to raids, cordon & searches, liaison, and humanitarian missions and should include a thorough search for evidence and photographs - on location and at time of detention - of individual(s) with the evidence (contraband, illegal weapons, IED making materials, etc.). Evidence collection will be conducted IAW ROE / security agreement and applicable regulations. A minimum of one OC/T is required to cover down on the operation. Legal and HUMINT OC/T coverage is recommended to ensure the activity conforms to ROE/security agreement and Geneva Convention requirements.**

2-6-3 Enemy Prisoner of War Interrogation Operations

1. **Overview: Some EPWs may have tactical intelligence that can be gained through interrogation. Interrogation is the art of questioning and examining a source to obtain the maximum amount of usable information. The goal of any interrogation is to obtain needed information, which is timely, complete, clear, accurate, usable and reliable, in a lawful manner and in the least amount of time, which meets intelligence requirements of any echelon of command. EPWs will be processed at**

the Brigade Interrogation Facility (BIF) and interrogated in the presence of a OC/T IAW FM 2-22.3 by qualified Military Intelligence (MI) interrogators only. All EPWs will be transferred to division within 24 hours of detention. Requests for extension at the BIF will be forwarded to the 52ID G3 for approval. A OC/T or COEFOR/COB LNO must remain with the EPW throughout the process until he or she is released to Division, OC/T, and/or COEFOR/COB LNO control. The use of force, mental torture, threats, insults, or exposure to unpleasant and inhumane treatment of any kind is prohibited by law and is unauthorized by the US Government and the National Training Center.

a. Any EPW/detainee interrogated without a OC/T present will be assessed as a non-battle casualty and evacuated thus causing BLUFOR to lose any potential intelligence.

b. COBs attempting to turn in weapons or provide intelligence to the unit can be held for interrogation IAW 52ID policy, unit SOP, and ROE but should immediately be reported to the 52ID DTOC. A OC/T will monitor the status of the individual for accountability purposes.

2. Interrogations. Interrogations will only be conducted in the presence of a HUMINT MOS OC/T IAW FM 2-22.3, 52ID Policy, and all applicable federal law. The only approaches authorized for use are outlined in FM 2-22.3. Restricted Interrogation techniques Separation, Mutt and Jeff, and False Flag must be approved by the first O6 or above in the chain of command. All interrogations will be conducted by certificated interrogators only. Additionally, theater-specific guidance and regulation may be applicable for theater-specific training.

2-7 Imagery Intelligence (IMINT)

1. Overview. The 3rd MI Center, 2nd MI Battalion, provides the primary instructors and technical and tactical advisors on Geospatial Intelligence (GEOINT). The National Reconnaissance Office (NRO) handles all national systems (e.g. satellites) used for collection. The 743rd and 513th MI Battalions provides Advanced Geospatial Intelligence (AGI) and National Geospatial Intelligence Agency (NGA) information and reach-back support during deployment.

2. Typical GEOINT Missions for BCTs: Analysis of HVI, cache hunting / discovery, IDF events, point targets, key terrain, smuggling routes, illegal border crossings, HLZs, force protection, suspected training facilities, cross-cue storyboards, airfields, ingress/egress routes, BDA and target folder support. BCTs may disseminate products to host nation personnel using Commercial Remote Sensors (CRS) or unclassified imagery.

3. AGI/MASINT Reporting and Dissemination Service (AMRDS). AMRDS is a website used to request and obtain MASINT/AGI products. The site is employed by 3d MI, NASIC, 743d MI BN, 513th MI BDE, and many others to disseminate regular imagery products and AGI products via JWICs and SIPRNET. The website is user friendly for both the producers and customers. Prior to requesting products, BCTs must obtain a customer account.

2-8 Document and Media Exploitation (DOMEX)

1. Overview. Document and Media Exploitation (DOMEX) is integrated within the scenario at the National Training Center and allows the BCT to exercise its exploitation systems. AJP 2.5 and FM 2-22.3 define a document as any piece of recorded information, regardless of form, obtained from the enemy that subsequently comes into the hands of friendly forces. Most prevalent and frequently used at the NTC are documents, such as letters, identification cards, and scraps of paper, pictures, newspapers, and magazines.

2. Site Exploitation. BCTs will be expected to adhere to the Tactical DOMEX Structure in which the capturing unit conducts site exploitation on the objective. Commanders will determine who

conducts site exploitation by assigning the duty as an additional duty or creating a Tactical Site Exploitation (TSE) team. Depending on METT-TC, site exploitation will be conducted either by the maneuver element that cleared the site or a dedicated team tasked to perform site exploitation duties.

3. **Procedures. The unit that conducts the site exploitation will maintain chain of custody and accountability and consolidate all documentation and reports relevant to the mission (e.g. sworn statements, apprehension forms, evidence inventory forms, and circumstances of capture). In the event of detainees, the detainee's pocket litter will be transported with the detainee. Once site exploitation is complete, the site exploitation team will coordinate turn-over of captured materials to the first echelon exploitation cell, which usually is located at BCT S2 section. Paper documents of immediate tactical value can be photographed and transported to the company intelligence cell for action and passed to the Battalion for analysis and reporting to answer information requirements (IRs), otherwise everything is transported to the BCT. As not all BCTs will be augmented with a Multi Functional Team (MFT), the Brigade S2 will notify 52ID of the captured enemy documents by type. If the brigade transfers the material to the division, within 12-24 hours the applicable DOMEX and MEDEX reports will be produced and sent back to Brigade S2.**

4. **Tactical Site Exploitation (TSE). TSE consists of a series of activities conducted at a secured site, focused on collecting documents, media and materials with potential intelligence or evidentiary value. Brigade Combat Teams are encouraged to grow this capability within each maneuver platoon in the BCT.**

5. **CELLEX. The cell phone/site exploitation team will exploit any equipment found on site or in possession of detained personnel. CELLEX must take place out of sight and away from high traffic areas. CELLEX may only be conducted on the government furnished training phones. Operational Security (OPSEC) procedures should be carefully followed when moving equipment to the CELLEX site. The operator should note mission essential information concerning the piece of equipment (e.g. location, time, identity of source, serial #).**

6. **Multi Functional Team (MFT). MFTs perform SIGINT operations, Interrogations/Tactical Questioning, site exploitation and exploition of Captured Enemy Documents (CEDs). MFTs are capable of exploiting all types of electronic media, paper documents, and cell phones. MFTs may provide initial exploitation results directly to the supported unit.**

2-9 Technical Intelligence (Weapons Intelligence Teams [WIT])

1. **Overview. Rotational units may be supported by Weapons Intelligence Teams (WITs). WIT collects and fuses weapons technical intelligence into the BCT all source picture and enemy targeting process. To replicate WIT reporting during the rotation, WIT will provide feedback to each unit IED event in which the unit deploys the WIT team to a site where the evidence has been properly secured and handled. A WIT team will provide an initial storyboard report of the incident at the same time as the initial Biometric Intelligence Analysis Report (BIAR) is released. Within six hours, WIT will provide an updated storyboard report. WIT may be embedded with an EOD team during operations which will provide it security and transportation to the exploitation site.**

2-10 Biometrics/Forensics

1. **Biometrics Automated Tool Set (BATS). The BATS database consolidates biometric data (e.g. fingerprints, iris scans, and facial photos) and biographical information of persons of interest into a searchable data base. BATS data is used in support of threat analysis, tactical operations, force protection, detainee operations, population control, base access, IED forensics operations, Special Operations, and local hire screening / intelligence. 52ID and the training BCT will maintain the BATS database. Rotational units may draw BAT computers.**

2. **The SEEK device is a portable biometrics tool used to obtain information during operations. The SEEK must be loaded or updated prior to all operations with the current "watch list" to enable the units to identify individuals who have been identified as a High Value Target (HVT) or person of interest. Users can enroll, match or verify with the three primary biometrics; iris, finger and face. The user interface also allows the entry of biographic data to create a comprehensive database on the enrolled subjects. Use of SEEK and BH Roleplayers. All insurgents captured or killed during the Situational Training Exercise (STX) and force on force period will be entered into SEEK and uploaded into the BATs computer IOT achieve the training goals of the BCT.**

2-11 Unattended Ground Sensors (UGS)

1. **Overview. UGS systems use a combination of detectors. Seismic detectors (geophones), used to identify ground vibration caused by vehicles or pedestrians. Magnetic detectors monitor movement of metal objects such as weapons or vehicles. Acoustic sensors are used to detect targets by specific acoustic signatures (noise of engine, tracks etc.). Passive infrared (PIR) sensors detect movements of objects in a narrow field of view. Input from the detectors activates the Gateway on-board signal processors. The gateway correlates the signatures into verified target detection, triggers an alarm, and automatically transmits a report by radio to a central monitoring point to alert reaction forces on the suspect area. Rotational units may employ UGS at NTC.**

2-12 Ground Reconnaissance and Security

1. **Safety. Intelligence, Surveillance, and Reconnaissance (ISR) assets, Sniper Teams, LRSD, MFT, and other intelligence type elements may operate in small groups isolated from friendly units with limited life support. Safety of personnel is a primary concern.**

2. **Requirement. A minimum of six quarts of water and one MRE per person per day through change of mission or until next resupply. If a section has no water or food they will be extracted, by an OC/T if necessary. All elements will maintain positive communication with parent headquarters and consist of no less than two personnel at all times.**

3. **Loss of Required Personnel. If an element is reduced to a single Soldier capable of movement due to MILES casualties, no further movement is possible. The survivor may continue operations from that point, but will not separate from the other Soldier(s) in his element.**

4. **Loss of Prime Mover. If reconnaissance vehicles, EW assets, or other intelligence type elements send out OPs and/or Sniper Teams, and the vehicle is a catastrophic kill, then the OP and/or Sniper Team must depart sector with the vehicle, if required Class I was on board, as determined by the OC/T adjudicating the engagement.**

5. **Loss of COMMO. If units lose radio contact and are unable to effectively link-up with another element with communication within two hours, they must immediately report to the nearest OC/T or COEFOR/COB LNO. If neither is available, report to the nearest unit (may be friendly or enemy). If reconnaissance elements send out OPs and/or Sniper Teams, and the vehicle is catastrophically destroyed, then the OP and/or Sniper Team must depart sector with the vehicle if the OP/Sniper Team is relying on the destroyed vehicle's radio for communication to his parent unit.**

6. **Loss of Mobility. If a vehicle mobility kill is assessed, the dismounted element may remain for the duration of the mission as long as they are within 300 meters of friendly vehicles. If authorized to remain in sector for the next mission and their location is within limits as specified by Combat Battle Instructions (CBI)/change of mission instructions for that mission, the element may remain for the subsequent mission provided all other safety requirements have been met.**

7. **Instrumentation Requirements. Fidelity of the automated tracking and representation of R&S units and/or Sniper Teams for AARs is critical. All mobile units (mounted or dismounted) will have a**

functioning DCI unit. Static OPs (e.g.: DRTs or dismounted infantry LP/OPs), Sniper Teams, and non instrumented elements for which MIKs are not available, must be approved by DTOC to operate without a tracking device. If approved, their position must be accurately reflected by the NTC-IS at all times. Any reconnaissance vehicle which crosses the RL/LD with a functioning DCI unit that later becomes inoperative may, upon approval by DTOC, continue to operate provided their position is accurately maintained in the Instrumentation System (IS) by player positioning. The COEFOR/COB LNO or OC/T accompanying the element must call in its location to the appropriate TAF every 15 minutes or 400 meters. The IS icon must at all times reflect the true location of the vehicle. Failure to adhere to these rules results in a catastrophically destroyed vehicle and removal from the battlefield at the direction of the DTOC and the affected OC/T team.

8. **Dismounted Engagements. OPs and/or Sniper Teams that have been killed with small arms fire or stealth kills, or are captured are considered compromised. OPs and/or Sniper Teams that have been compromised may be detained. Enemy forces are allowed to copy compromised graphics, radio frequencies, and other information deemed as having intelligence value by the OC/T adjudicating the event. There are no "safe pockets"; any information or objects on compromised individuals are subject to exploitation for intelligence gathering purposes. All objects being exploited for their intelligence value must remain with the individual; they cannot be confiscated by player elements (i.e., the player may copy the graphics from a detained individual's map under OC/T supervision, but the map and graphics will remain with that individual). Refer to the detainee events section in Chapter 3 for capture/search procedures. An OC/T must be present in order to obtain access to information from enemy forces.**

9. **Mounted Engagements. R&S vehicles that become catastrophic kills are destroyed, not compromised, and contain no useful information to enemy forces. Captured and/or simulated battle damaged vehicles that become compromised possess full intelligence value regardless of mobility or firepower kill status. Refer to the detainee events section in chapter 3 for capture/search procedures.**

Chapter 3
Maneuver

CHAPTER 3 – MANEUVER

3-1 Engagements

1. **MILES outcomes have precedence when determining the results of actions on the NTC battlefield. The following assessments apply: MILES rules the battlefield! Vehicles without MILES require a waiver signed by Commander, Operations Group NLT than RSOI 3 in order to participate in training. If MILES become non-operational during a battle, OC/Ts will adjudicate as necessary. If MILES become non-operational between operations, the vehicle or Soldier cannot participate in any future operations until the MILES is fixed/replaced. OC/Ts will overrule MILES outcomes when MILES sensors are obscured, MILES does not adequately replicate fragmentation or ricochet behavior, or MILES clearly does not replicate battlefield conditions. No vehicle may be exempted from MILES engagement outcomes unless overruled by a OC/T.**

2. **Direct Fire BDA. Direct fire engagements will be governed by MILES results except where MILES does not adequately replicate battlefield conditions. Rules for normal events follow:**

Table 3-1 Figure 1
AWES-RF/MILES II BDA Assessment

BDA Category	Battle Damage Assessment
Catastrophic	Vehicle is unsalvageable. All functions cease immediately. Note; Vehicles which are mobility kills and subsequently receive a firepower kill (or vice-versa) automatically become catastrophic kills.
Mobility	Vehicle may not move further. If moving at the time, the driver will bring the vehicle to a safe halt immediately. The vehicle may continue to fire and communicate.
Firepower	Vehicle may not continue to fire. The MILES transmitter will be disabled. Vehicle may continue to move and communicate.
Penalty Kill	Failure to take the directed action for mobility kills will be detected by the NTC-IS and the vehicle will automatically receive a catastrophic kill as a penalty. This action will be recorded on the vehicle VDD and passed through the NTC-IS to the TAF.

   a. **Near Miss. Notification. When a system is engaged but the rounds are off target or the system was engaged by an inappropriate type weapon (e.g. M4 firing on a tank), the Combat Vehicle Kill Indicator (CVKI) light will flash 2 times and stop. An audio message will be played on the vehicle intercom, and the Crew Module (CM) will indicate a near miss**

(see Table 3-1 Figure 2 for display codes). Immediate Action. Personnel should respond with appropriate battle drill. Vehicle remains fully operation.

b. Firepower Kills. When a system is hit and determined to be a firepower kill, the CVKI light will flash four times and stop. An audio message will be played on the vehicle intercom, and the CM will indicate a firepower kill (see Table 3-1 Figure 2 for display codes). Vehicle weapon transmitter will be disabled. Immediate Action. Vehicle may continue to move and communicate. It will not discharge signature devices to simulate firing. Ammunition may only be cross-leveled under OC/T supervision.

c. Mobility Kills. Notification. When a system is hit and determined to be a mobility kill, the CVKI light will flash four times and stop. An audio message will be played on the vehicle intercom, and the CM will indicate a mobility kill (see Table 3-1 Figure 2 for display codes). Immediate Action. Driver will bring vehicle to an immediate safe halt. If the vehicle moves 25 meters, it becomes a penalty kill. The vehicle may continue to communicate and shoot. NOTE: In cases of emergency, the vehicle will still be capable of movement. This action, however, will be recorded automatically on the NTC-IS and the vehicle assessed as a penalty kill. Personnel capable of movement <u>may</u> reposition to provide local security. They will remain within 300 meters of the vehicle unless they have an operational MIK. Ammunition may only be cross-leveled under OC/T supervision (see Chapter 8 - Logistics for resupply procedures).

d. Catastrophic Kills. Notification. When a system is hit and determined to be a catastrophic kill, the CVKI light will flash continuously. An audio message will be played on the vehicle intercom, and the CM will indicate a catastrophic kill (see Table 3-1 Figure 2 for display codes). This will also occur when a firepower kill vehicle receives a mobility kill or vice versa. The combination of firepower and mobility (in either order) results in being assessed as a catastrophic kill. Immediate Action. Vehicle occupants will come to an immediate safe halt if moving, or if in a fighting position pull out above ground, cease all radio transmissions and firing, and place the gun tube over the back deck. Failure to do this will result in being automatically assessed as a penalty kill by the NTC-IS. Crews will not use pyrotechnics to signal location of battlefield contact. No ammunition or equipment may be cross- leveled to other vehicles.

e. Penalty Kills. Penalty kills are assessed for three categories: MILES Not-To-Standard, Charging and BDA Limitation Violation. Infractions are assessed by the OC/T will automatically assessing a MILES not-to-standard penalty to Soldiers knowingly circumventing the MILES system, or removing batteries. Soldiers may be assessed as immediate KIA/WIA (Penalty). Cases of MILES not-to-standard involving suspected cheating will be reported through both the rotational unit chain of command and OC/T channels.

f. OC/Ts may assess casualties for safety violations or unsafe acts to include lack of appropriate Personal Protective Equipment (PPE), incorrect use of PPE (i.e. wearing CT-OISglasses during limited visibility operations), or not wearing seat belts or gunner restraint system in a vehicle. Casualties should be assessed based upon the severity of the safety violation.

g. Charging. Intentionally closing within the 3/5/10/50 meters to achieve a Safety Kill or cause enemy forces to reposition/expose themselves is defined as charging. This is not permitted. Soldiers who do so will not be granted Safety Kills, but will themselves be assessed as Penalty Kills for this unsafe conduct.

h. Table 3-1, Figure 1 outlines MILES BDA categories and mobility restrictions. Violation of these limitations will result in a penalty kill. This is normally assessed automatically through the NTC-IS system.

i. Subsequent Action for Catastrophic and Penalty Kills

3. **Personnel. All personnel in vehicles put their MILES casualty cards into effect once received from a OC/T. Personnel will remain in the vehicle unless instructed by a OC/T. KIA personnel will not communicate with other personnel and will not move around or otherwise indicate that they are still in play until the battle or operation is complete.**

4. **Equipment. Catastrophically destroyed vehicles are of no recovery or exploitation value to any rotational player. Ammunition may not be cross-leveled. During Force on Force operations all equipment must be secured and evacuated IAW Ch 8 to prevent exploitation by opposing forces.**

5. **Fighting Positions. If in a fighting position when destroyed, crews will pull out of vehicle fighting positions to signify they are destroyed; but the position will be considered occupied by a burning hull.**

6. **Recovery and Reconstitution. No further action by the vehicle or crew is allowed until recovery and reconstitution procedures are conducted by the unit, or further guidance is received from a OC/T.**

Table 3-1
Figure 2 MILES VDD Codes

CM Code	Weapon				
00	Controller Gun	13	155mm Howitzer	22	25mm M2/3 Bradley
01	Maverick Missile	13	122mm Howitzer	22	ZSU 23-4
02	Hellfire Missile	13	122mm Rocket BM21	23	20mm Vulcan
03	AT-3 (Sagger) Missile	13	152mm Howitzer	23	30mm BMP2
04	60mm, 81mm, 4.2in Mortar	14	2.75in Rocket	24	M2, M85 .50 cal Machine Gun
05	M15 AT Mine	14	57mm Rocket	24	12.7mm Machine Gun
07	TOW Missile	14	73mm Cannon BMP1	25	SA-9
07	AT-5 (Spandrel) Missile	15	VIPER LAW	25	SA-13
07	AT-8 (Songster) Missile	16	120mm M1A1/2 Tank	25	Chaparral
08	Dragon / Missile	17	90mm Recoilless	25	ASET SA-8
09	Javelin Missile	18	105mm, 152mm Howitzer	25	ASET SA-9
10	M21 AT Mine	18	203mm Howitzer	26	Stinger

10	**125mm T72, T80 Tank**	**19**	**40mm Grenade**	**27**	**M16A1, M60MG, M240MG**
11	**M18 Claymore Mine**	**20**	**Rockeye CBU**	**33**	**SA-14**
11	**M16A1-AP**	**21**	**30mm A10 GAU-8**	**34**	**ZSU 23-4 Radar Mode**
12	**105mm M1, M60 Tank**	**21**	**30mm AH-64**		**Codes subject to change due to MILES updates**

7. Resurrection Procedures.

a. BLUFOR. OC/Ts will control resurrection of BLUFOR systems. The 07 of the affected OC/T team on the ground will make final determination.

b. COEFOR. COEFOR resurrections prior to entering the close fight will be handled by COEFOR/COB OC/Ts and/or their TAF after prior coordination with the DTOC. Resurrections are not normally authorized for vehicles in direct fire contact. The 07 of the affected OC/T team on the ground will make final determination regarding any requests by COEFOR/COB OC/Ts. All requests will be routed through the COEFOR/COB TAF to the DTOC and then to the affected OC/T team.

8. Direct Fire Signature Requirements. All weapon systems will emit a "signature" to replicate the ammunition discharge when firing. Vehicles not emitting a signature may be assessed as a Penalty Kill and those systems killed by such, may only be resurrected at the discretion of the Team 07.

9. Systems with Automatic Signature Devices. A MGSS, ATWESS, FLASHWESS, or blank must be fired during direct fire engagements. If the system runs out of signature rounds, it is out of ammunition and may not fire. If the MGSS or other approved signature device is non-operational, then the weapon system it represents becomes non-operational.

10. Constraints. Tank crews may only load 17 rounds (M1A1) or 18 rounds (M1A2/SEP) into the MGSS at one time. This replicates the number of rounds in the ready rack. Once expended the crew must reload the MGSS to replicate cross-leveling from the semi-ready rack.

11. Systems without Automatic Signature Devices. Vehicular mounted machine guns which emit a MILES signature without firing blanks (example, the T80 coaxial machine gun) must discharge a MGSS for every 100 machine gun rounds fired.

12. Javelin. Round count for Javelin is based on the Basic Load. The system defaults to 99 rounds when reset.

13. Reloading Procedures. When the MGSS rack is expended on vehicles in contact, the vehicle will immediately move to cover and reload. Defensive fire to provide protection while actively seeking cover is authorized.

14. MILES Defilade. Personnel and weapon systems must have the capability of being killed when they would realistically be vulnerable. Conditions which defeat the MILES laser beam but would be ineffective against actual munitions are referred to as MILES Defilade conditions.

a. Camouflage Nets. Camouflage nets are a necessary part of passive counter sniper operations. When camouflage nets obscure an operational and capable MILES system OC/T will adjudicate casualties based on weapon system and cover.

b. Intentional. Using inadequate cover to defeat the MILES laser such as brush, smoke, and dirt berms of insufficient dimensions to defeat actual projectiles is not authorized. Berms around vehicle positions that are not-to-standard will result in being assessed as a Penalty based on opposing weapons system if fired upon by an operational and capable MILES system.

c. Unintentional. At times, operational requirements will place inadequate cover between MILES belts and attacking weapon system. For example, a driver's IWS/MIK may be blocked by a door/canvas etc. A OC/T assessment will be made for engagements in these cases.

15. Ricochet and Fragmentation Effects. A OC/T's assessment will be made when direct fire weapons are shooting at concealed, but either uncovered or partially covered infantry. When such forces would be vulnerable, but are not because the MILES cannot replicate ricochet and fragmentation effects, they may be assessed as casualties by the OC/T.

16. Special Cases. 3/5/10/50M "Safety Kill" Rule and Accidental Charging. Due to safety considerations, close combat is not permitted. Accidental situations will occur when forces come into close proximity. These point blank engagements will be assessed by OC/Ts. Rules follow:

a. Immediate Action. When a target appears at less than the prescribed separation distance above, vehicle drivers will stop immediately and their TCs will cross their arms over their face to signify that they are engaging. The vehicle gunner will traverse the turret and/or weapon system at least 90 degrees away from the target being engaged and then fire the weapon system to emit a signature ensuring that there are no personnel within 50 meters of the MGSS and/or ATWESS blast area. Dismounted Soldiers will halt and cross their arms to signify that they are engaging.

b. Assessment. OC/Ts will make a subjective evaluation based on the weapon systems involved and assess vehicles and/or personnel on either side as appropriate. The killing vehicle(s) or personnel will be directed to expend rounds in a safe direction to account for the kill(s).

17. Minimum Arming Distances. Certain AT weapons (e.g. - Javelin, TOW, AT5, etc.), are ineffective within 50 meters based on minimum arming distances. Soldiers relying on these weapons within 50 meters will not be credited with a Safety Kill.

18. Accidental Charging. Unknowingly closing within the prescribed distances is defined as accidental charging. This can occur when approaching well camouflaged positions, dug-in infantry, operating under limited visibility, etc. For safety reasons, OC/Ts will halt units who accidentally charge. When vehicles close within 25m of dismounted Soldiers in a hide or prone location, the Soldiers will stand and expose himself/herself as a safety measure to avoid physical contact with the vehicle. When possible, the forces will be separated, cautioned and permitted to continue. It may be necessary for a OC/T to Administratively Kill a vehicle to cause it to halt. In these cases, the OC/T will determine if resurrecting the vehicle will present a bad signature on the battlefield, such as when under observation and being engaged by direct fire. The OC/T on the ground makes this assessment based on safety and the tactical situation.

19. Stealth Kills. BLUFOR and COEFOR Soldiers under OC/T control can make kills of vehicle crews or sleeping dismounted Soldiers. Rules follow:

a. Preparation. A OC/T must be present before the silent kill is executed by the unit (COEFOR or BLUFOR). The Soldier informs the OC/T that he intends to make a silent kill and points out to the OC/T the vehicle crew or personnel. The OC/T confirms that the Soldier has the appropriate weapon(s), such as a bayonet, and the Soldier demonstrates the method he will use to accomplish the mission.

b. Execution. The Soldier, under the control of the OC/T, will then move to the vehicle/ personnel until he is within five meters. At no time will the Soldier climb on a vehicle or make physical contact with any Soldier or vehicle during an attempted silent kill.

c. Assessment. If successful, the OC/T will awaken the victim, and assess him as a KIA. Soldiers killed in this way may not use any of the vehicle or other radios to communicate their situation. If the "killer" is compromised during his attempt, the OC/T will assess casualties as necessary.

20. Special Conditions: Bunker Engagements. Bunkers must be built to standard in accordance with applicable TMs. Direct fire against bunkers will be assessed in one of two ways:

a. TVS available. When available, Tactical Vehicle Systems (TVS) kits will be mounted on the bunker. OC/T will check TVS MILES prior to LD time to confirm that it is within view and operational. Assessments will be made based on MILES kills.

b. TVS Unavailable. If the bunker does not have TVS, the results will be determined by OC/Ts using Table 3-1 Figure 3.

Table 3-1 Figure 3
Bunker Engagement Results

RANGE	ELEVATION	ROUNDS TO DESTROY
2000m or less	Bunker level w/tank	1
2000m to 2500m	Bunker level w/tank	2
2000m or less	Bunker higher than tank	2
2000m to 2500m	Bunker higher than tank	3

21. Interaction between Enemy Forces.

a. Physical Contact. Enemy Soldiers, RTU Soldiers, and civilian role-players will never make physical contact with another person or their belongings except when a OC/T is present to supervise.

b. Contact with Vehicles.

i. Catastrophic Vehicles. Catastrophically destroyed vehicles cannot be exploited. The only exception to this is the exploitation by a Weapons Intelligence Team (WIT) under the supervision of a OC/T or for IO purposes. OC/Ts on the ground will determine how much time will elapse before they allow players to close within 50m of the destroyed vehicle (For example if the vehicle is destroyed at 1200 hours, then the OC/T on the ground may determine that the vehicle is a "burning hulk" for six hours and therefore no one can close within 50m to exploit the vehicle until 1800 hours).

ii. Operational or Damaged Vehicles. Serviceable and simulated damaged vehicles may be searched under OC/T supervision. The search may not be initiated until a OC/T is present and the OC/T may end the search at any time at their discretion. Nothing may be removed from the simulated damaged vehicle or its occupants without OC/T supervision. Searching personnel will clearly identify what they intend to search to the OC/T. They may copy graphics, radio frequencies, and other information that may have intelligence value. There are no "safe" areas preventing search of a serviceable or simulated damaged vehicle.

22. **Use of Projectiles. Absolutely no object will be thrown or fired at opposing player. RKG-3s and hand thrown MRE hand grenades can be thrown at vehicles, or under OC/T supervision. Any other type of projectile must be pre-approved by an OC/T and must meet training requirements. For further guidance reference Chapter 5, Paragraph 5-2 Training Demolitions.**

23. **White Phosphorous Battle Damage. Once the signature for White Phosphorous smoke screen has been established, residual White Phosphorous burning on the ground will remain in play for ten minutes following the final round being fired for the smoke fire mission. The OC/T on site will track the ten minute window. If dismounted Soldiers pass through the smoke screen, defined by the smoke cloud and direction of drift, then they will be assessed as casualties. Wheeled vehicles driving through the smoke screen area will be assessed as mobility kills. If the vehicle does not "button up" or have the ability to do so, then all personnel inside the vehicle will be assessed. Tracked vehicles may pass through the WP area during the ten minute burn time without penalty. Any exposed personnel within an unbuttoned-up vehicle will be assessed as casualties during the ten minute burn time.**

3-2 Dismounted Operations

1. **MILES and Instrumentation.Personnel will be equipped with an Individual Weapon System (IWS) harness and halo. Individual weapons will be equipped with a Small Arms Transmitter (SAT). The SAT must be associated with the IWS harness in order to operate. When a solider is assessed as a fatality, the weapon will not function until the soldier re-associates the weapon with a harness.**

2. **MIK. The MIK has the capability of the IWS plus a GPS position locating and AWES sensing capability. Every squad and each separate dismounted element, up to squad size, operating on the battlefield will have a minimum of one operational MIK.**

3. **Issue requirement. All squad-sized dismount elements, dismounted patrols, and local LP/OPs must each have an operational MIK or be accompanied by an instrumented vehicle (see Chapter 2 - Intelligence for dismounted R&S element requirements). Personnel without a MIK must remain within 300 meters of a vehicle DCI, MIK, or a OC/T.**

4. **Initial Position (PL) Checks. All MIKs used in dismounted patrols by either COEFOR or BLUFOR will be checked by the appropriate TAF NLT 30 minutes prior to LD. The dismounted patrol cannot LD unless the MIK is tracking or is accompanied by a OC/T. Dismounted OPs must also have a functioning MIK or be accompanied by a OC/T.**

5. **Initial Position (PL) Lost Condition. When the PL is lost on any dismounted patrol element, accompanying OC/Ts or COEFOR /COB OC/Ts will report locations every 15 minutes or 400 meters of movement. This will allow the symbol to be player positioned for AAR purposes.**

6. **Retention of MIK. Soldiers issued MIK harnesses that become casualties, will exchange them for IWS harnesses with Soldiers who have not been hit. All dismounted infantry elements must keep their MIK with them at all times, regardless of the casualties they suffer.**

7. **Exceptions to MIK Requirement. Exceptions to MIK requirement for COEFOR units will be made by DTOC. Exceptions for BLUFOR units will be made by the senior team trainer.**

8. **Authorization. Dismounted operations are authorized within the constraints of mission times as specified in the OPORD/FRAGOs and the boundaries/limits given to the BLUFOR/COEFOR through DTOC. Requests to conduct dismounted operations prior to established mission times, in or out of sector, must be approved through the DTOC.**

9. **Life Support. A complete safety risk assessment will be conducted prior to all operations. Adequate means of life support, consisting of either available Air MEDEVAC, or a minimum of one**

wheeled and/or tracked vehicle will accompany dismounted elements that are operating more than five kilometers from other friendly mounted units, or they will be escorted back to the unit assembly area by their respective OC/T and/or COEFOR/COB OC/T If operating within five kilometers of friendly mounted elements, a dismounted element will ensure it has radio communications with the mounted element to facilitate ground MEDEVAC procedures. If communication is lost between the dismounted and mounted elements, then the dismounted element will be escorted back to their assembly area by their OC/T and/or COEFOR/COB OC/T. OC/Ts have the ability to stop a dismounted operation if the unit preparation and lack of logistical support places undo risk to life, limb, or eyesight to the Rotational Training Unit Soldiers.

10. **Minimum Manning. Minimum manning for a dismounted OP is two Soldiers, and established radio communication with the next higher element.**

3-3 Air Assault and Air Mobile Operations

1. **General. Both BLUFOR and COEFOR units conduct air assault operations. COEFOR air assaults are referred to as Task Force Angel; authorization and mission specific instructions are found in the CBI.**

2. **MILES and Instrumentation. All troop carrying aircraft in an air assault operation will be fully equipped with MILES. Those aircraft with non-functioning MILES will not participate in the lift; or based on the OC/Ts call the aircraft must stay with the flight. However, if any aircraft are killed in the lift, the non-MILES aircraft, including the Soldiers on board, will also be assessed, and will return to the PZ.**

    a. **Helicopters. All COEFOR and BLUFOR aircraft will have an OC/DCI, MIK, or MILES B. COEFOR air assaults are flown by LUH-72 VISMODs to provide visual recognition of a COEFOR air assault.**

    b. **Personnel. Dismounted infantry squads will have an operational MIK. BLUFOR DCI checks must be completed prior to departing the PZ through the respective TAFs. One seat per chalk will be allocated for a OC/T. Once the dismounted elements depart the LZ, the OC/T team will have responsibility for controlling and making assessments on that dismounted element, with the assistance of the appropriate COEFOR/COB OC/Ts. Exceptions to instrumentation requirements must be approved by DTOC. In approved cases, player positioning will substitute for the instrumentation.**

    c. **DCI Checks. The TAFs will verify escort aircraft and platoon MIKs are tracking prior to departure from the PZ. Air assaults will not be authorized to depart the PZ until all instrumentation is properly tracking. Release must be given by DTOC prior to departure from the PZ for any exceptions.**

3. **Flight Routes. The flight path and landing zone (LZ) for aircraft must be within the COEFOR/COB and BLUFOR units' area of operations. Air assault aircraft will be permitted to veer outside of the boundaries to avoid airspace obstacles presented by other aircraft for safety reasons. Non-emergency route changes must be approved by the DTOC.**

4. **Aircraft Communication Requirements. COEFOR aircraft will maintain contact with the Eagle OC/T or COEFOR/COB LNO during all operations in the maneuver box. Positive communications with Desert Radio and Eagle TAFF shall be maintained at all times.**

5. **Static Load Training. All Soldiers conducting air assault operations or air movement operations will conduct static load training prior to mission execution. Static load training will consist of aircraft entry and exit procedures, location and use of emergency equipment, and emergency egress procedures in case of a forced landing. The supported unit OC/T will verify through the**

rotational unit chain of command that all Soldiers have completed this training prior to conducting the air assault/air movement operation. Each Soldier is required to receive the static load training on each aircraft type only once per rotation.

6. **HIND Escort Requirements. HIND VISMODs must provide a signature and security for COEFOR air assaults. Until the UH-60 aircraft are modified with a distinct signature, HIND VISMOD aircraft must remain within 1500 meters of the troop carrying aircraft to facilitate hostile identification. There are no UH-1/UH-60 missions authorized without HIND escort aircraft.**

7. **Division Early warning Net. DTOC provides both BLUFOR and COEFOR tracking information on respective Division Early Warning (DEW) nets.**

8. **Ground to Air Assessments. All ground to air engagements will be assessed IAW the standard rules of engagement. Those aircraft that are successfully engaged during ingress will also have the troops onboard assessed.**

9. **All air assault lifts are competitive. Lifts may go to separate LZs provided that the LZ has been coordinated through the DTOC 24 hrs prior to ensure OC/T coverage at the various LZs. COEFOR may designate 1 Primary and up to 3 Alternate LZs. OC/Ts will cover on all LZs to ensure adequate coverage. COEFOR may change from the Primary to any of the Alternate LZs enroute.**

10. **Out of Sector Air Assault Operations. In general, the rotational unit will receive spot reports of MTIs, penetration, and engagements by the adjacent unit and of the HIND squadron turning into the rotational unit sector.**

11. **Reconstitution. If a troop carrying aircraft is assessed as a MILES kill on ingress or in the vicinity of the LZ, it will remain with that lift but will not be authorized to offload its troops. Once the lift returns to the PZ the aircraft will be reconstituted and used again for the remainder of the air assault mission due to restricted aircraft availability, however, the troops and equipment cannot be reinserted on a follow on lift.**

    a. **If a COEFOR escort aircraft is assessed to MILES, either on ingress, in the vicinity of the LZ, or egress, it will remain with that lift to present the Air Raid Detachment (ARD) signature but cannot engage BLUFOR units. Once the lift returns to the PZ, the "assessed" escort aircraft can be resurrected (if authorized). The CBI will state how many "lives" SOKOL escort aircraft have for that day. If SOKOL uses all of its escort lives before completing the air assault, no more lifts will be authorized to depart the PZ.**

3-4 Urban Operations

1. **General. The NTC has numerous urban training areas across the spectrum of operations rotations.**

2. **Restrictions.**

    a. **Uniform. All Soldiers operating outside of FOBs/COPs/JCC/JSS must wear a minimum of the following equipment. Uniforms on FOBs/COPs/JCC/JSS are at the Rotational Unit Commanders discretion.**

    Duty Uniform (ACUs/DCUs/BDUs/Nomex, Service Uniform)
    ACH
    Approved Ballistic Eye Protection
    IBA w/plates; neck, throat and groin protectors
    Fire Resistant Gloves
    Earplugs/Ear Protection

3. **Building Type. Survivability of buildings is based upon actual representation unless otherwise specified by the DTOC or OC/T team (i.e. - wooden structures will be adjudicated as wooden structures). Adjudication will be based on the actual thickness of walls and roofs unless otherwise specified by the OC/T team.**

4. **Rooftop Operations. Units will not conduct helicopter, fast rope, or rappel landings onto building tops unless authorized by the DTOC. Personnel are allowed onto the roofs of buildings for sniper employment and OPs under at the discretion of the OC/T team on the ground.**

5. **AT Weapons Backblast. AT weapons fired from inside buildings must meet the backblast and clearance requirements listed in FM 90-10-A. Soldiers who are within the backblast area, or in an area that does not meet the clearance requirements when the weapon is fired, will be assessed as casualties IAW the MILES card given to them by a OC/T.**

6. **Open Fires. The minimum distance between burn barrels and buildings is 5 meters; however there are no open fires (to include cooking fires, warming fires, and candles) that are allowed within 25 meters of a building or in the buildings themselves.**

7. **Flame Producing Pyrotechnics. No flame producing booby traps of any type will be installed in buildings. All other booby traps will be dismantled when the element vacates the building. Anytime a booby trap is utilized in a building, a means to extinguish any possible fire will be present (e.g., fire extinguisher, filled 5 gallon water can).**

8. **Maneuver. Vehicles are authorized to maneuver in urban areas and engage targets IAW the restrictions listed below:**

    a. **Tracked vehicles are not authorized to move in the town of Medina Wasl or the NUWC Tracked vehicles are not authorized to move on paved roads unless it is a concrete turn-pad. Vehicles are authorized movement within all other towns pending that the vehicles will not damage the infrastructure of the buildings within the towns and road networks. Pivot/Neutral steering is unauthorized within towns and on hardball road networks.**

    b. **The minimum distance between vehicles and personnel outside of buildings is 5m with exceptions at the OC/T's discretion. A OC/T must be present with any tracked vehicles operating within 1000 meters of an urban area. The OC/T has the authority to stop any tracked vehicle (to include assessment) operating in an unsafe manner in vicinity of dismounted personnel within an urban area.**

    c. **No physical contact between vehicles and any structures is authorized.**

9. **Effects. Weapons effects will be assessed against structures IAW a realistic outcome based on the weapon system and construction of the structure. See discussion and table as follows:**

    a. **5.56mm at less than 25 meters. Wood paneling, sheetrock, and plaster offer no protection. All individuals seeking protection behind a structure will be adjudicated appropriately. 5.56mm at less than 50m will be stopped from one thickness of sandbags, ammo cans or cinder blocks filled with sand, or one thickness of bricks.**

    b. **7.62mm at less than 25 meters will penetrate 13 inches of wood, 2 inches of concrete, 5 inches of dry/loose sand, and through a car body. At less than 50 meters, 7.62mm will be stopped with one thickness of sandbags and a 55 gallon drum filled with sand.**

    c. **50 cal will penetrate double sandbags, triple bricked walls, 18 inches of reinforced concrete, car bodies, and all wooden structures.**

d. M203HEDP/Mk-19 will penetrate 2 inches of hardened steel, double sandbags, double cinder blocks, and 12 inches of wood.

Table 3-4
Weapon Effects Adjudication

Caliber round/ distance	5.66mm	7.62mm	.50cal	M203/MK-19
Less than 25m	Wood Paneling; Sheetrock; Plaster	13 inches of wood, 2 inches of concrete, 5 inches of dry/loose sand, a car body	Double sandbag, triple bricks, 18 inches of reinforced concrete, Vehicle bodies, all wooden structures	2 inches of hardened steel, double sandbags, double cinder blocks, 12 inches of wood
Less than 50m	Will not penetrate one thickness of sandbags, ammo cans or cinder blocks filled with sand, or one thickness of bricks	Will not penetrate one thickness of sandbags, 55 gallon drum filled with sand	N/A	N/A

10. Assessments due to Building Damage.

a. Building Repair. Destroyed buildings will be marked with orange tape across all apertures (doors/windows). Destroyed buildings may not be reoccupied until they are reconstituted. Player units (this includes BLUFOR and COBs) can reconstitute buildings if they demonstrate a capability to repair and/or reconstruct the destroyed building. OC/T Team 07s retain final approval authority to reconstitute destroyed buildings based on reconstruction efforts and/or the requirement to meet future training objectives.

b. Clearing Operations. If dismounted personnel are utilized to clear buildings, a OC/T must be present for the mission.

i. Engagements Under 10 Meters. Because of the nature of urban operations (UO), engagements within 5m of a combatant may occur. As a result, eye protection is required at all times during UO. Soldiers not wearing IO protection in a UO environment will be immediately safety killed. The minimum distance for combatants engaging one another within the same structure is 3m, and is subject to OC/T adjudication. Combatants attempting to engage targets at less than 3m should utilize the "crossed arms – safety kill" technique with OC/T supervision. Anyone executing a safety kill within a building must announce "safety kill" and fire a round in a safe direction to provide a signature for personnel outside the building. When clearing rooms, the OC/Ts will make the call on when direct fires between forces will cease. When direct fires have been ceased, the OC/T within the building will adjudicate all further engagements based on the procedures followed by the appropriate forces.

11. Demolitions and Dynamic Entry. All units are required to conduct reconnaissance of the proposed target and gather the critical information to calculate the amount of explosives needed to destroy the target. Units must use the appropriate formulas IAW FM 3-34.19, to include Minimum Safe Distance (MSD) calculations. OC/T's verify demolition calculations and placement of charges prior to any force receiving credit for breaching or destroying a structure. Units must have on hand and correctly place and prime the amount of demolition training aids calculated to receive credit for destroying a structure. Demolitions Effects Simulators (DES) are the preferred training aid at the NTC because of they produce sufficient visual and sound effects to enhance battlefield realism. DES is used to replicate; IEDs, flex linear charge, cutting charge, cratering charge, and breaching charges. DES will be constructed IAW FM 3-34.19

12. **Subterranean Operations. Subterranean Training Sites on Fort Irwin:Ghar Al Raid/Haji Ghar NV139151, Ghar Albai/Alpine Ghar NV248272, Ghar Bruno NV 370221 Ghar Wadi Khafi/Pot Dara Ghar NV430080, Ghar Ismok La/Ne Nam Ghar NV376975, Ghar Tassa Bihar NV570003, and Ghar Tassa Al Arozz/Brenj Kasa Ghar NV259151, represent caves dug into sheer granite with solid construction. Numerous underground tunnels can also be found vicinity the Town of Medina Jabal/Ertebat Shar NV 367118. During force on force training casualty assessment due to collapses are possible if the training unit uses simulated demolitions and explosive munitions. Smaller munitions will not cause catastrophic collapse. Use of simulated pyrotechnics and demolition in the complex would cause severe overpressure and casualties if these munitions are employed with personnel present in the cave. The complexes should be considered impervious to normal tube launched artillery unless fired with precision munitions, such as Excalibur, GMLRS or in direct mode at the opening.**

13. **The Challenger Buried CONNEX: The Challenger Buried CONNEX in Training Area LF16, Grid NV433326 represents a Subterranean Command Post of earthen construction. Demolitions and live fire training is prohibited. A collapse is likely with the use of grenades and even small amounts demolitions. The Subterranean environment is susceptible to cave-in with heavy volumes of tube launch artillery > 155mm.**

14. **Pyrotechnic Devices and Smoke. Booby Traps: The only pyrotechnic booby trap authorized in the cave is the M117 booby trap simulator. All other booby traps are to be non-lethal and approved by a OC/T. No use of CS gas or smoke is permitted inside or within 10 meters of a cave or tunnel complex. If smoke or CS gas enters the cave due to wind directions and drifting the cave must be evacuated immediately. These gases in confined areas can displace oxygen rendering all gas masks (except respirators with oxygen tanks) useless inside. Rotational units may clear tunnels with smoke by showing a OC/T that they have the capability. The unit must still maneuver within throwing distance of the cave entrance with a OC/T present. The rotational player will then expend the smoke grenade by throwing it a safe distance <u>away</u> from the cave complex. Only after this step is executed, will the OC/T adjudicate at his/her discretion.**

15. **Weapons. 3/5 meter rule: No firing of blanks is authorized within 5m of an opposing Soldier (or 3 meters for engagements taking place inside structures and cave complexes. Small Arms Only: Only 5.56 blank is authorized inside caves and tunnels due to the noise hazard. The cave should be considered to have a serious ricochet effect. Vehicles with MGSS devices will observe the 50 meter safety zone when firing at the entrance to the cave. Ricochet and fragmentary effects of AT weapons and large vehicle mounted weapons fired at the opening of the cave will be assessed by OC/Ts. Stoves or Open Flames. Stoves and open flames are unauthorized in subterranean complexes due to exposure to unsafe carbon monoxide resulting in asphyxiation. Use of Obstacles. Obstacles can be placed in the cave complex. Special care will be taken to ensure obstacles do not prevent the evacuation and movement of personnel operating within the cave. Obstacles will not be placed below overhead entrance points or vent holes. Placement of obstacles at these points could cause serious injury to units using these openings to enter the complexes. Upon completion of the rotation, rotational units are responsible for removing any obstacles placed in subterranean complexes. Use of Vehicles near the Cave. No vehicles may operate on top of any subterranean complex or within 10m of subterranean entrances/exits to prevent exhaust from entering the cave.**

<u>3-5 Special Operations Forces</u>

1. **General. Special Operation Forces (SOF) will operate under direct 52ID control. Liaison teams with maneuver elements allow training in coordinating force protection, CSAR, or infiltration/extraction type missions. SOF OC/Ts will notify the Town OIC and/or Town Leadership at least one hour prior to SOF RTU elements entering a town. Coordination should include the**

SOF task/purpose, locations they intend to operate, and personnel they intend to contact. OC/Ts may delay SOF entry into a town in order to meet the minimum one hour coordination requirement.

2. **MILES and Instrumentation. All SOF player unit personnel will wear IWS MILES. Vehicles and weapons will be equipped with TVS. Soft or Boonie Caps. If soft or boonie caps are worn by SOF Soldiers, then MILES IWS' will be worn on the soft or boonie caps. SOF forces may wear duty uniform or civilian attire while operating in support of either BLUFOR or COEFOR at the NTC. Exceptions. SOF personnel train on weapon systems which do not have MILES, but are critical to mission accomplishment. If necessary, and coordinated in advance, special provisions/adjustments concerning MILES will be made. Refer to Chapter 15 for additional information.**

3. **Grooming Standards. SOF personnel may operate under relaxed grooming standards, adding realism to training (if deemed appropriate by SOF CDR). Refer to Chapter 15 for additional information.**

4. **Live Fires. SOF personnel are authorized to conduct live fire from NSTV (Non Standard Tactical Vehicles) with appropriate Risk Assessment and Safety Waiver approval prior to conduct of event. Refer to Chapter 15 for additional information.**

5. **Ultimate Training Munitions. Use of UTM are authorized and require 48 hour notification and coordination with COEFOR and town OIC to ensure distribution, use and wear of PPE, blue barrels, and training ammunition. Refer to Chapter 15 for additional information.**

6. **Communications Flow. All communications with SOF RTU elements will be routed through the DTOC.**

7. **SOF Nets. LNOs sent to brigades will not permit BLUFOR to monitor SOF RTU or other operational traffic on Special Operations nets.**

8. **Escape and Evasion Operations. Escape and Evasion (E&E) operations undertaken during the course of the exercise may be terminated at SOF OC/T discretion.**

3-6 Pyrotechnics and Munitions Replication

1. **Pyrotechnics. Pyrotechnics include standard smoke, booby traps, flares, etc. to include ATWESS, HOFFMAN/MGSS.**

2. **Booby Traps. Only NTC approved booby traps, trip flares, etc. are authorized for use by the Rotational Unit. All pyrotechnics to be used by the Rotational Unit must be approved by a OC/T prior to it leaving the RUBA.**

3. **Smoke/Flares. Rotational Units may expend smoke grenades, parachute flares, and star clusters per unit SOP with exceptions as noted below.**

4. **Red Smoke/Red Star Clusters are only used to signify real world emergency situations. Yellow smoke is only used by firemarkers and OC/Ts to signify NBC effects and SCATMINE minefields.**

5. **Hand Grenades. MRE hand grenades replicate all hand grenades during force-on-force training and may be used during rotational exercises provided the following requirements are met.**

6. **Production. MRE Grenades are produced at the company level in assembly areas once a unit has conducted the necessary supply requisition and prior coordination to receive paper ammunition through unit supply channels. OC/Ts will then verify successful completion of the supply**

requisition process before allowing the unit to begin construction of MRE hand grenades. Each MRE hand grenade will consist of an MRE bag filled one quarter full with loose sand. Rocks found in these bags will make the MRE hand grenade unserviceable. The bag will be folded over three times and taped shut. An unbroken chem-lite will be taped to the top to replicate the hand grenade pin. MRE grenades are distinguished by the color of their chem-lite. MRE hand grenades cannot be reused once employed.

7. **Replication. Listed below are the colors used to represent grenades and grenade effects:**

    a. **Blue Chem-Lite – Concussion Grenade (MK3A2). This grenade produces casualties based on personal casualty cards within a 2m radius both in enclosed spaces and in the open. The grenade will have a temporarily disorienting effect on personnel in enclosed spaces within the 2 to 5 meter radius. Stunned personnel will not be able to react for 5 seconds. OC/Ts will enforce a 5 second "no action" period on effected personnel. This grenade causes minor damage to equipment but no damage to structures or vehicles. OC/Ts will adjudicate collateral damage based on equipment type, ballistic protection, and proximity to blast.**

    b. **Yellow/Green Chem-Lite – High-Explosive/Fragmentary Grenade (M67). This grenade produces KIAs within a 5m radius and casualties based on personal casualty cards out to a 15m radius. When used within a closed environment the killing effect will remain at a 5m radius. This grenade causes damage to structures, vehicles, and equipment. When employed, the grenade is replicated by a OC/T throwing a grenade simulator, if available. OC/Ts will adjudicate collateral damage based on equipment type, ballistic protection, and proximity to blast.**

    c. **Red Chem-Lite – Stun Grenade (M84). This grenade produces an incapacitating and disorienting effect on all personnel within a 2m radius when employed in enclosed spaces. Stunned personnel will not be able to react for 5 seconds. OC/Ts enforce a 5 second 'no action' period on effected personnel. This grenade produces no significant effects in open spaces or outside the blast radius. This grenade produces no damage to structures, vehicles, or equipment.**

    d. **White Chem-Lite – Incendiary Grenade (AN-M14 TH3). This grenade destroys equipment, vehicles, weapons systems, shelters, and munitions. This grenade burns at 4000 degrees for 40 seconds with no significant blast radius rendering it ineffective in an offensive role. If thrown at personnel, there is no effect. OC/Ts adjudicate damage/destruction based on equipment type and proximity to the device.**

8. **Execution. To ensure proper effects are replicated, grenade throwers will display the grenade to be employed to a OC/T or COEFOR/COB LNO. If a OC/T or COEFOR/COB LNO is not present, or the grenade is not shown beforehand allowing proper identification, then the grenade will default to a fragmentary grenade.**

9. **Device Restrictions and Employment. Expended grenades are policed up by OC/Ts to ensure they are not reused. Unexpended Grenades may be redistributed within the unit as per other items of ammunition.**

10. **Arming. To arm the grenade, the Soldier will break the chemlight (to replicate pulling the pin) and lob the grenade at the intended target. Grenades are employed in accordance with the tactical situation, but are not to be thrown at a high velocity at personnel. Soldiers will yell 'frag out', prior to employing a grenade to notify the OC/T to take position in order to make assessments. 'Frag out' implies the Soldier is 'throwing a grenade, pay attention and take cover'. Incoming grenades may not be picked up and thrown back.**

3-7 Special Equipment Replication

1. **Javelin Anti-tank Guided Missile. Javelin is equipped with an Anti-Tank Launch Effects Simulator (ALES). Javelin Crews will use additional missiles for the Javelin system are replicated by a 21.6 pound sandbag to replicate the size and weight of each additional Javelin round. The BDE ammunition officer initially controls paper ammunition stocks with subsequent allocation to BN S4s IAW the unit's ammo SOP.**

2. **Employment. Employment of the Javelin missile will be replicated by the Field Tactical Trainer (FTT), the Command Launch Unit (CLU) and the Simulated Battery Coolant Unit (SBCU).To replicate Javelin signature, a hand grenade simulator will be thrown for the first and every third Javelin round fired. OC/Ts will ensure the grenade is thrown within 50 meters of the gunner, but thrown in a direction that enables the opposing force to identify the sight and sound of the grenade simulator. (Ie., OC/Ts and COFOR cannot throw the grenade behind the defilade and down a hill that is not visible to the unit being engaged).**

3. **Simulated Battery Coolant Unit (SBCU). Units receive credit for one SBCU per round (Field Tactical Trainer and/or SR). Javelin gunners may carry one additional SBCU (simulated) as an authorized spare. Expended spare SBCUs will be collected by OC/Ts and re-issued after verification of appropriate documentation.**

4. **Engagements and Engagement Criteria. Units engage targets in accordance with (IAW) the following requirements:**

    a. **The MILES equipped FTT counts as a single round. OC/Ts program additional rounds and SBCUs into the FTT based on the number of sandbags available at the firing location.**

    b. **Replicated rounds should have an assigned lot number. Lot number will enable OC/Ts to verify that the replicated item was procured through supply channels. A list of approved lot numbers will be maintained at respective TAFs or with the OC/T covering down on the ASP/S-4.**

5. **Bunker Engagements. Assessed bunkers result in the bunker destroyed and all occupants becom casualties. Bunkers that are not equipped with MITs or IPPD are assessed on the first shot, provided the bunker is within range and can be engaged by the Javelin (line of sight), as verified by the supervising OC/T.**
6. **Class V Residue. Training units are responsible for the accountability and back haul of CL V residue (pallets and missile boxes) from forward units to the division ammunition supply point (ASP) no earlier than CTM instructions plus 2hrs and NLT CTM plus twenty-four hours to facilitate repackaging and re-issue to the brigade.**

7. **Safety. All training unit Soldiers who employ the VIPER ATWESS trainer must receive, as part of their initial safety brief prior to departing the cantonment area, a class by the OC/Ts on the proper handling and employment of ATWESS training rounds.**

8. **TOW 2b Top Attack Adjudication. With more TOW variants, specifically the TOW 2B and TOW 2B Aero, increased range and increased capability will require more OC/T manual adjudication. The TOW 2B is an Above-Target/top attack warhead. The target point of an armored vehicle (both MILES and actual) is the slip ring between turret and hull. With the inclusion of the TOW 2B and TOW 2B Aero (wireless top attack missile), OC/Ts will need to adjudicate based on munitions, range, and type of target engaged. For engagements where top attack mode is utilized (standard mode for TOW 2b) OC/Ts will verify all systems operated properly, emitted a signature IAW EXOP, and adjudicate the engaged vehicle based on range and vector of the attack if it's in a 'MILES berm" or physical berm/defilade.**

9. **Improved Explosive Devices (IEDs). Specific information regarding the creation, replication, and execution of Improved Explosive Devices, especially in a low-intensity environment, can be found**

in Chapter 5, Engineers. IEDs will only be implemented by insurgent forces, and can only be disabled by EOD. IEDs will be adjudicated by the OC/T on scene according to Chapter 16-5-3.

3-8 Detainee Searches

1. **Personnel Searches. OC/T Requirement. Personnel searches may only be conducted in the presence of an OC/T. Any searches conducted without OC/T coverage will be immediately stopped, and the personnel being searched will be permitted to break contact as a result of improperly initiating search procedures. The unit will not be able to exploit information found on an individual searched without OC/T coverage.**

2. **Gender. A rotational unit Soldier may search a role-player of a different gender ONLY if the followig conditions are met:**

    a. **An OC/T must be present to witness the search. The Soldier conducting the search will clearly describe the search procedures, pointing out where he/she would search. The detainee will follow the directions of the Soldier conducting the search. Items that (in the opinion of the OC/T) would have been discovered during a physical search are immediately forfeited.**

    b. **The Safe Bag. One 'Safe bag' is authorized for COEFOR and Role Players. This bag is constructed using a zip lock sandwich bag with 100 MPH tape on the front and back near the opening. On one of the sides of the owner annotates:**

    Name: Last, First, MI
    Troop/ Town
    Date

    The Safe Bag will contain only the following items:

    Medication
    Military, civilian identification (non-role)
    Wallet

    The Safe Bag MAY NOT CONTAIN:

    Role ID card
    Grids to caches
    Government cell phones
    Personal cell phones. All cell phones are in play and may be confiscated and exploited by BLUFOR. Personal cell phones found on COEFOR/COB personnel will be turned over to Town OIC or COEFOR/ COB OC/T. The OC/T Team 07 with consultation from Team 09 will determine the intelligence value of the cell phone based on the role of the COEFOR/ COB player.

3. **Items of intelligence value. (Associated with the training scenario) Must not be carried within or with personal items like wallets or photographs, or hidden in areas that may not be searched due to the restrictions of the training environment.**

4. **Identification documents. Those associated with the detainee (whether real or related to the training scenario) must be forwarded with the detainee at every level.**

5. **Sensitive items. Those found in the possession of a detainee will remain in control of the detainee or turned over to a OC/T or COEFOR LNO. If the detention occurred within or near a town, the**

local law-enforcement which is usually comprised of COEFOR leadership can accept responsibility for the items. Rotational unit Soldiers may not remove the sensitive items from control of the detainee unless a OC/T is present and approves. If the items remain with the detainee they may not be used by the detainee during his detention.

6. **Vehicle Capture Procedures. Soldiers may not block a vehicle's path with their bodies to capture it. Soldiers who attempt to do so become casualties IAW their MILES casualty card. Soldiers should approach stationary vehicles with caution.**

7. **Catastrophic or safety killed vehicles, bunkers or fighting positions are completely destroyed and are of no intelligence value. In the following four instances, graphics and radio information may be made available to the "capturing" unit by the covering OC/T: A successful Stealth Kill;An abandoned or cached vehicle is found; or All personnel on a vehicle being engaged are killed or rendered combat ineffective. Vehicles destroyed at a Check Point.**

8. **Combat Vehicle Search Procedures. Prior to any information being exploited, the capturing Soldier must first request inform their OC/T of their intent to search the vehicle to the nearest covering OC/T. Once this has occurred, the OC/T, accompanied by the senior Soldier from the captured vehicle, will observe the inspection of the combat vehicle. On tracked vehicles, the inspection will entail the OC/T and the capturing Soldier mounting the vehicle and looking in the turret without entering the turret.**

9. **Other Vehicle Search Procedures. . COB equipment or vehicles may be searched at any time, provided an OC/T or COEFOR/COB OC/T is present. BLUFOR will not drive any COB vehicles. There are no safe areas in these vehicles, however TA-50, sensitive items, protective masks, MILES, and other accountable/personal property including pogey bait, tobacco, and any other item purchased by the COEFOR/COB will not be confiscated. If the BLUFOR unit requests to impound the vehicle to a designated area, the driver of the detained vehicle will remain with the vehicle and drive it to the rotational unit's detention holding area. The vehicle will remain with the driver throughout the detention process until BHO to MP's at echelons above the BCT. If detention occurs in vicinity of a town, the vehicle and keys may be turned over to the COEFOR/COB town leadership. If the vehicle being detained becomes inoperable for maintenance reasons, then the OC/T on the ground will contact an COEFOR/COB LNO to facilitate recovery of the vehicle by COEFOR/COB maintenance support assets. BLUFOR may continue to evacuate the detained driver after he hands the vehicle over to the responding COEFOR/COB maintenance support assets. If a vehicle is damaged or destroyed by BLUFOR or COEFOR actions, the BLUFOR must replicate towing of the vehicle by show the OC/T the resources necessary** and display the method they will use **to tow the damaged vehicle.**

10. **Intelligence Provided. The OC/T will determine if any maps or overlays are reasonably available (visible) and direct the vehicle Soldier to provide it to the capturing Soldier. Radio frequencies set on any vehicle radio will always be considered reasonably available. Material provided can be copied on site, but will be returned to the senior Soldier of the captured vehicle.**

11. **Quarantine and Return of Captured Equipment. All captured equipment will be evacuated to the rotational unit's detention/holding area until they are processed and handed over to MP's at echelons above the BCT and/or released. Following BHO of the vehicle to MP's at echelons above the BCT, the vehicle will not reenter the area of operations for a minimum of six hours. All vehicles reentering the AO after the six hour period will do so competitively.**

3-9 Detainee Handling Process (After 24 Hours)

1. **Overview. Detainees on the division "Detain, Suspect, Protect" (DSP) list must be reported immediately and processed to competent Host Nation authorities within 24 hours from the time of capture. Brigades and MSCs have the implied task of servicing the Division DSP list and are authorized their own internally refined DSP list. Brigade specific DSP lists will be forwarded to the**

52ID G2 for review. Detainees on the Brigade DSP list will be reported to division as part of routine reports (SITREP, INTSUM, IIR, etc.) and transferred to Division within 48 hours. Exploitation of all detainees at the BIF by qualified HUMINT personnel, HUMINT Collection Teams (HCTs) from the Military Intelligence Company, BSTB or the brigade Tactical HUMINT Team (THT), will be conducted IAW FM 34-52 and all OC/T and Geneva Convention (FM 27-10) requirements discussed in paragraph 2-7 are in effect. A detainee is any person captured or otherwise detained by an armed force. Within the limits of the ROE and SOFAs, detained persons may be interrogated or questioned. They are frequently excellent sources of information and immediate access and exploitation by qualified HUMINT personnel from the HCTs or THTs is critical. The US HUMINT collector must remember that, regardless of the legal position of the detainee, they must be treated in accordance with the appropriate Geneva Convention.

2. **Initial Questioning. Initial questioning can provide critical information for situational understanding. Tactical questioning is the expedient initial questioning for information of immediate tactical value. This is distinguished from casual or routine interaction with the local population, as it is not really questioning. The soldier conducts tactical questioning based on the unit's standing operating procedures (SOPs), rules of engagement (ROE), and the order for that mission. S3s must provide appropriate specific guidance in the form of (special orders and requests [SORs]) down to company, troop, or battery level to help guide tactical questioning. This information that the soldier reports as a result of tactical questioning will be passed up the chain of command (some to the Battalion S2 and Brigade S2) and forms a vital part of planning and operations.**

3. **Restrictions. All detainees must have a OC/T present to be questioned. Questioning will occur IAW ST 2-91.6 (Small unit support to intelligence) and unit SOP/TTPs. NOTE: Only trained interrogators may interrogate!**

4. **Evidence Collection. Proper evidence collection as part of detainee operations is critical to successful prosecution of indigenous suspects associated with anti-US/Coalition activities, including terrorism, in local courts. Evidence collection should be performed as part of detainee operations (Raid, Cordon & Search) and should include a thorough search for evidence and photographs - on location and at time of detention - of the individual(s) with the evidence (contraband, illegal weapons, IED making materials, etc.). Evidence collection will be conducted IAW ROE applicable regulations. A minimum of one OC/T is required to cover down on the operation.**

5. **Photographs. Any and all evidence. Units should take photos of everything that could be used in the courtroom (ie. crime scene, weapons, shell casings, footprints, and tire tracks). Overall, 'Best Evidence Photos' involve: "Evidence at the Scene with the Detainee" (best) or "Evidence at the Scene".**

6. **Statements/Testimony. Ideally, each case should have two coalition forces witnesses – and any cooperative local nationals (with specific contact information). The "Five W's" - all witnesses should have first-hand knowledge of events: Who? - What? - When? - Where? - Why? Generally, sworn written statements are not sufficient for cases. Witnesses must testify – live at court or via VTC.**

7. **Diagram/Scene Sketch. This should be annotated – Indicating Key Pieces of Evidence/Events. The sketch should also include estimated distances - in meters - b/w key points of interest. Landmarks/Cities/Villages should be referenced as well. Sketches can be handwritten but preference is for Power Point or other graphic program. Google Earth / Unclassified Falcon View of the area.**

3-10 Searches/Destruction of Caches, Bunkers, and Buildings

1. **Caches. There is a common way the enemy forces use to re-supply insurgents and regular forces on the battle field. These caches may contain weapons, ammunition, and all classes of supply. Caches are subject to search, capture, and destruction by BLUFOR.**

2. **Destruction. If the capturing unit desires to destroy a supply stockpile/cache; they must show the OC/T the resources necessary** and display the method they will use **to accomplish the destruction. The OC/T marks the supplies as destroyed and notifies DTOC to arrange for evacuation of the notionally destroyed supplies.**

3. **Evacuation. If the capturing unit desires to evacuate and retain/exploit accountable property, only certain items may be taken by the BLUFOR from a cache. These items are simulated weapons and ammunition, or documents of intelligence value. Actual weapons, ammunition, or classes of supply may only be removed from the cache location under supervision of a OC/T or a COEFOR/COB OC/T. These items may be transported to the rotational unit's FOB for inventory purposes and will remain under COEFOR/COB OC/T control at all times during transportation and inventorying. Once these items are inventoried/tagged, the items will be released back to the COEFOR/COB OC/Ts for accountability purposes. Items will not be taken from a cache without a OC/T's knowledge**

4. **Buildings and bunkers. They may also be searched as needed. Some areas within towns will be considered off limits and exempt from BLUFOR searches. These areas will be clearly identified by the town OC/T.**

3-11 EOD/WIT Tactical Site Exploitation

1. **Purpose. Provide the BCT with exploitable evidence that they collect from COEFOR emplaced targets. The RTU will then have the ability to analyze and produce actionable targeting packets based off of collected evidence throughout Force on Force.**

2. **Procedures for Employment. The COEFOR will place a functional and exploitable target (Complete IED, HME, CACHE, etc.). These components are to be collected by the RTU for exploitation and then returned back to the Terrorist Explosive Network shop at the end of every rotation. If the IED has functioned the Pale Horse OC/T will then emplace post blast evidence for the unit to collect. Pale Horse OC/T must ensure that the post blast evidence matches the IED that was emplaced. An example is RCIED will have evidence of electronics. It is the responsibility of the RTU to maintain proper chain of custody with documentation. This will ensure accountability of IEDs and exploitable evidence.**

3. **Biometric Intelligence Analysis Reports (BIAR). Once the evidence makes it to the weapons intelligence team lead, the WIT team then has 6 hours to produce a respective BIAR match. The WIT team lead will ensure both the EOD commander and BCT S2 receive a copy of the report. The WIT team lead will produce at least one BIAR match during the CPX exercise run during STX.**

Chapter 4
Fire Support

CHAPTER 4 – FIRE SUPPORT:

4-1 Command and Control

1. **Command. The field artillery headquarters for all NTC rotational units is the 52ID Field Artillery Brigade / X Corps Artillery Headquarters. The Senior Fire Support Combat Trainer (Wolf 07) is the 52ID Field Artillery Brigade Commander and X Corps Artillery FSCOORD. Wolf 07 retains approval authority on all fire support matters at NTC as the senior fire support combat trainer. Warrior 27 serves, as the 52ID DFSCOORD.**

2. **Control. The Commander, 52ID with the assistance of the DFSCOORD controls field artillery echelons above brigade.**

4-2 FA Organization

1. **General. Rotational maneuver brigades will deploy with their organic field artillery battalion and organic mortars. Additional fire support assets may not be added without the approval of the Commander, Operations Group.**

4-3 Fire Control

1. **BLUFOR. The BCT/RCT FSE will maintain FM voice and digital communications with 52ID/X Corps FSE at all times. Units must also meet these conditions to be granted Red Indirect during Live Fire Operations. Rotational units will process all fire support tasks IAW unit SOP. Only those fire mission requests that have been correctly executed through the fire support channels and fire direction centers will be processed for replication. An OC/T must be present in order to fire. Prior to firing a mission or subsequent corrections, the FDC must provide the OC/T with the artillery mission card listing for replication and casualty assessment during force on force operations and final clearance during live fire:**

   Target number
   Target location
   Pieces to fire
   Special instructions
   Type of projectile

Charge
Fuse time setting when applicable
Number of rounds
Range to fuse function (ILL)
Range to impact (ILL)

2. **Requirements for FFE Missions. Artillery firing units must meet the five requirements for Accurate Fires prior to firing any Fire for Effect (FFE) missions. (failure to meet the 5 requirements forces the unit to fire in the 'adjust fire mode').**

3. **Target Location and Size. Target grids will not be closer than MSDs as published by the live fire team to friendly troops depending on the type/caliber/MSD of the weapon system being utilized.**

4. **Firing Unit Location: Firing positions will be surveyed to 5th order accuracy and have a direction common to all other firing elements. The only exceptions and restrictions will be the Hasty survey methods outlined in FM 6-50 or listed below:**

    a. **Location: Global Positioning System (GPS), Graphic resection, and graphic traverse may be used to attain position location. Map spotting is not an authorized method for Live Fire. When a GPS is used to attain position and directional control for a firing unit, the crypto variable must be loaded to establish artillery positions IAW 6-50. AN/PSN-13 Must be set up and verified in accordance to TM 2011-5820-1172-13 (DAGR). The proper crypto keys must be loaded to achieve necessary accuracy. Datum WGS-84. Coordinates MGRS. Elevation. Mean Sea Level (MSL) is used. For unit of measurement Meter is used. Almanac data must be 1 day old.**

    b. **Directional Control. Simultaneous Observation (SIMO), Polaris-Kochab Method, Polaris 2 Method, and directional traverse may be used to establish directional control.**

5. **Weapon and Ammunition Information. Ammunition Information and Muzzle Velocities will be applied at all times in order to conduct Fire For Effect (FFE) missions during Force on Force and Live Fire. Muzzle Velocities can be derived by any means specified in FM 6-40, Chapter 4 (Muzzle Velocity Management), including; Calibration, Subsequent-Lot Inference, Predictive Muzzle Velocity Technique (Ch 4-2), and Estimating Shooting Strength (Ch 4-3). Calibration must be completed at NTC in order to meet the reduced SDXs/MSDs for all live fire operations.**

6. **Meteorological Data (MET). Current computer MET information IAW FM 3-09-15, Tactics, Techniques and Procedures for Field Artillery Meteorology, will be maintained by all firing elements. If the firing unit cannot meet MET requirementsthe firing unit can only engage targets using adjust-fire missions or by conducting one of the registration methods described in FM 6-40.For units equipped with the Global Broadcasting System (GBS) Receive Suite AN/TSR-8 Transportable Ground Receive Suite (TGRS) the authorized MET Data is the Global Forecasting System (GFS) download obtained every 12 hours. The primary method is downloading the GFS data into the profiler CMD-P AN/GMK-2 and transferring MET data to the AFATDS. The secondary (alternate method) is to access the unclassified GFS website and burn MET data to a disk. If the secondary method is used the MET data must be updated at a minimum every 72 hours with every 36 hours being preferred. The Air Force Weather Agency (AFWA) Met or IGRADS Met is no longer an authorized means of determining meteorological data. There is no backup system for obtaining MET data available, if the GBS fails and or GFS data is unavailable.**

7. **FDC Procedures. All FDC procedures must have dual independent secondary checks. The computational fire direction procedures used to determine firing data must meet the accuracy required for double checks (+/- 3 mils in deflection and quadrant and +/- .01 fuse time setting). No emergency fire direction procedures will be used unless specifically directed by a senior OC/T.**

8. **Live Fire Area. The live fire area for fire support systems at the NTC is the area north of the line connecting NV 618264, NV 618190, NV 580190, NV 560180, NV 440180, NV 300224, NV 300290, NV 260290, NV 260425, NV 457425, NV 457361, NV 553361, NV 554346, NV 564346, and NV 618264, and widely known as Phase Line Dragon. From the northwest to the southeast, the other limits of the live fire area are bounded by the line connecting NV 069424, NV 458242, NV 458362, NV 553362, NV553347, NV 602347 and NV 602297. This includes Leach Lake Training Range. Consult Zulu TAC or the Dragon Team for Fire Support Coordination Measures in effect throughout the live fire area.**

4-4 Artillery Movement

1. **Movement Times. The movement and ready to fire times for an actual unit is as performed. Notional unit movement is replicated on the CT-OIS Units must designate SP, RP, and CPs as required. Notional battery commanders will provide OUTTIL times to the field artillery battalion. If a firing battery/platoon or radar is directed to conduct a hip shoot, the firing unit will be ready to fire within 15 minutes. The radar will be ready to radiate within 20 minutes. The unit will not proceed to the next position until directed by the field artillery battalion TOC. Table 4-4 contains notional unit movement and occupation times. Units, which are not ready to fire, will not be credited with the fire missions.**

Table 4-4
Notional Artillery/Radar Movement Tables

System	Displacement	Movement	Emplacement/Ready to Fire
M109A6	1 minute	3 minutes per km	2 minutes
MLRS	1 minute	3 minutes per km	2 minutes
M119	15 minutes	3 minutes per km	12 minutes
M198	15 minutes	3 minutes per km	15 minutes
M777	2 minutes	3 minutes per km	3 minutes
AN/TPQ-36	4:30 minutes	3 minutes per km	9:30 minutes
AN/TPQ-37	20 minutes	3 minutes per km	30 minutes
AN/TPQ-53	10 minutes	3 minutes per km	5 minutes
Type 63 MRL	1 minute	3 minutes per km	2 minutes
2S1	2:20 minutes	3 minutes per km	5 minutes
2S3	2:20 minutes	3 minutes per km	5 minutes
2S5	2:20 minutes	3 minutes per km	5 minutes
2S7	5 minutes	3 minutes per km	8 minutes
2S19	2:20 minutes	3 minutes per km	5 minutes
MORTARS	3 minutes	3 minutes per km	3 minutes
BM-21	1 minute	3 minutes per km	2 minutes
BM-27	1 minute	3 minutes per km	2 minutes
IL-220	10 minutes	3 minutes per km	15 minutes

2. **Prepare to March Instructions. Notional unit may be issued prepare to march instructions which instructs the unit to prepare all equipment to move on a previously designated route. After a period of 10 minutes (which replicates the actual time taken to implement the order by loading all non-essential equipment) the notional unit displacement time is reduced to 7 minutes.**

4-5 Weapons Locating Radars

1. **Initialization Data. Actual radars and the controlling FA headquarters of notional radars must provide the following initialization data for all zone data to the 52ID Fires Brigade Counterfire Officer (Wolf TAF). The grid location, azimuth of search with left and right sector limits, mask angle, and target block must all be submitted along with the grids and activation times of any**

zones that will be put in the system. Updates are provided as needed. As with fire missions, operating data, and execution performance (survey accuracy, procedures, screening crests, etc.) is provided to the TAF.

2. **Acquisitions. Actual radars and the controlling headquarters of notional radars that are ready to observe will receive hostile fire unit locations and impact predict locations for enemy fire missions which occur during cueing periods and are within the provided radar search sectors.**

3. **COEFOR capabilities. When the COEFOR has the systems to electronically acquire the radar, acquisition is determined based on duration of radiation and type of radar site. Radar systems that radiate in excess of the maximums shown in Table 4-5-3 without displacing will be acquired and radar location reported through enemy fire support channels.**

Table 4-5-1
Radiation Maximums

Type of Site	Cumulative Radiation	Continuous Radiation
Opt. Radar Site	15 min	2 min
Opt. Screening Crest (only)	8 min	2 min
Other Site	2 min	2 min

4. **Notional Radar Counterfire time standards. When notional Radars are used to replicate BLUEFOR Q-36 or Q-37 and COEFOR IL-220 the following time standard is established to specify return counterfire standards. If the acquisition is a zone violation, the return counterfire cannot occur faster than 3 minutes 30 seconds. If the acquisition is not a zone violation the return counterfire cannot occur faster than 4 minutes 30 seconds.**

5. **AN/TPQ-36 Radar. The AN/TPQ-36 is designed to locate shorter-range, high-angle, and low-velocity indirect firing systems. However, it will locate high-velocity artillery and rockets within its capabilities. The maximum range of the Q-36 is 24Km with a minimum range of 750m. A total of 9 zones may be entered into the system. The system is only capable of providing 1600 mils of surveillance at a time.**

6. **AN/TPQ-37 Radar. The AN/TPQ-37 is designed to locate longer-range, low-angle, and higher-velocity indirect firing systems. However, it will locate shorter-range, high-angle, low-velocity indirect firing systems within its capabilities. The maximum range of the Q-37 is 50Km with a minimum range of 3Km. A total of 9 zones may be entered into the system. The system is only capable of providing 1600 mils of surveillance at a time.**

7. **AN/TPQ-53. Provides the combined capabilities of both the AN/TPQ-36 and Q-37 on one platform. It is capable of operating both in a 90^{o} mode and a continuously rotating 360^{o} mode. The maximum range of the system in the 90^{o} mode is 32 Km for artillery and 60 Km for rockets with a minimum range of 500 meters. In the 360^{o} mode the system's capabilities are reduced to an overall maximum range of 20 Km with a minimum of 3 Km. A total of 1000 zones can be entered in the system, either planned or active; however, it is limited to receiving only 30 digitally, which is the threshold in AFATDS. There are no further restrictions with the exception of overlapping; active zones cannot overlap.**

8. **AN/TPQ-48/49/50 LCMR Lightweight Counter Mortar Radar (LCMR). Provides the ability to automatically detect and locate mortar firing positions by detecting and tracking the mortar shell and then backtracking to the weapon position. The LCMR provides continuous 360° (6400 mils) surveillance using an electronically-scanned antenna. When a mortar is detected, the LCMR sends a message indicating the weapon's Point of Origin (POO) and Point of Impact (POI). (The LCMR system was designed to be compatible with airborne operations and can be deployed in jump packs or a door bundle). The system can be assembled and disassembled quickly by two Soldiers.**

9. **Modem. The Radar has an identical Wireless Modem that allows it to communicate with the R-PDA. The R-PDA and Radar can communicate at ranges up to 1 km over relatively flat ground. However, when operating near buildings or in hilly terrain, the wireless range between the Radar and the R-PDA is reduced.**

10. **Frequency. A value between 1250 and 1350 MHz must be entered by the operator and can be entered in 1 MHz increments. This may interfere with other systems on the battle field.**

11. **Wind Restriction. The LCMR operates in the presence of 30-knot wind. However, if the prevailing wind is 50-knots or more, the LCMR must be disassembled and protected from damage. The following factors should be taken into consideration when determining site selection:**

    a. **Place the LCMR in an area with the clearest field of view possible, because nearby buildings, trees, and other obstructions could seriously degrade the Radar's performance.**

    b. **The ideal location for the LCMR is on a hill or roof top above the surrounding terrain with a clear field of view.**

12. **Additional considerations. If placed on a hill, the slope should be 10° or less. When properly sited, the LCMR can provide continuous 360° (6400 mils) surveillance. However, the user may choose to limit the Azimuth (AZ) coverage to less than 360° (6400 mils) if obstructions such as buildings, vehicles, or trees are located near the LCMR. Make sure the Radar is positioned at least 10m from obstructions to prevent reflection damage. The Radar can operate in the presence of an obstruction, but its performance will be degraded.**

13. **Planning Ranges.**

	Mortars	Artillery	Rockets
AN/TPQ-36	18 Km	15 Km	24 Km
AN/TPQ-37	30Km	30 Km	50 Km
AN/TPQ-53 90° Mode	18Km	32Km	60 Km
AN/TPQ-53 360° Mode	15 Km	18 Km	20 Km

	60mm	81 mm	120 mm
AN/TPQ-48/9	4 Km	5 Km	6 Km
AN/TPQ-50	10Km	6Km	10Km

14. **Radar Cross Section (RCS) and target smoothed velocity (VEL). Advances in radar software make the detection and analysis of false acquisitions more precise. RCS values range from -50 to 0 decibels relative to a square meter (dBsm). Higher values are indicators of larger objects. Rockets, artillery and mortars generally have values of between -5 to -30 dBsm. Small arms generally have values of between -17 and 38 dBsm. The VEL represents the approximate speed of the projectile at the point at which the radar acquired it; measurements range from 0 to 1300 meters per second (m/s). Generally, rockets exceed 1000 m/s, artillery ranges from 250 to 800 m/s and mortars range from 300 m/s and less. Small-arms muzzle velocities typically range between 700 to 1000 m/s. Prospective velocity declines quickly and reliance on target smoothed velocity as an indicator of weapon type can be problematic. Combined with traditional pattern analysis techniques, radar cross section and velocity significantly improve the ability to discriminate between wanted, unwanted and false targets.**

15. **False Target: Information that causes the radar to report a target to the operator when there is no actual target.**

16. **Electronically induces signals. Side lobe tracks (helicopters, aircraft, vehicles, other ground clutter)**

17. **Unwanted Target: Targets other than mortar, artillery, or rocket which the radar reports to the operator. These are objects which pass through the beam and behave in a ballistic manner.**

    a. **Tank rounds, especially skips / ricochets, Individual rounds as small as 50 caliber, Bursts of small arms, Shrapnel or other material from explosions (spall), Radar Cross Section Breakdown.**

Table 4-5-9
Radar Cross Section Breakdown

BREAKDOWN			
ROCKET, ARTY, MORTAR	-5 to -30 dBsm		
SMALL ARMS FIRE	-17 to -38 dBsm		
VELOCITY			
LEGAL RANGE	0 to 1300 m/s		
ROCKET	excess of 1000 m/s		
ARTILERY	250 to 800 m/s		
MORTAR	Less than 300 m/s		
SMALL ARMS FIRE (SAF)	700 to 1000 m/s		
MUNITION	**RCS**	**VELOCITY**	**MAX RANGE**
60 MM MORTAR	-18 to -28 dBsm	80-135 m/s	3.2 KM
82 MM MORTAR	-11 to-20 dBsm	124-200 m/s	TYP 67=3.1KM TYP 69A 6.7KM
120 MM MORTAR	-5 to -17 dBsm	170-230 m/s	7.2KM
120 MM MTR RAP	-1 to- 5dBsm	230- 348 m/s	12KM
81 MM ROCKET	-13 to -20 dBsm	320-450 m/s	10KM
107 MM ROCKET	-14 to -23 dBsm	330-390 m/s	MIN 3KM, MAX 8.5KM
122 MM ROCKET	-16 to -23 dBsm	460-702 m/s	20.4KM DPICM 31.1KM
127 MM ROCKET	-10 to -15 dBsm	851-1000 m/s	SS30 MIN 9-30KM SIJEEL 39KM
60 MM MTR	-20 to -22 dBsm	132–150 m/s	3.2KM
120 MM MTR	-17 to -19 dBsm	190-200 m/s	
155 MM HE CHG 7	-17 to -20 dBsm	437-441 m/s	
MLRSM28A1 TNG RKT	-2 to -12 dBsm	416-471 m/s	
57 MM ROCKET	-40 dBsm	355 m/s	1 KM -1.5 KM

18. **NOTE: The lower the RCS value the smaller the Radar Cross Section (e.g. SAF -30 to -38dBsm). Larger values represent larger objects in the Radar Cross Sections.**

4-6 Laser Operations

1. **Force on Force Operations. Eyesafe lasers are the only laser range-finders/designators allowed to actually laze or designate in Force on Force Operations. Use of any other laser device is not authorized unless approved by 52ID.**

2. **Laser Capabilities and Restrictions. An OC/T must be present and operators must receive RED DIRECT FOR LASING through the maneuver chain of command prior to conducting any actual laser operations. OC/T has to make sure the RTU is qualified and certified within the last six month (Laser Safety Test).**

Table 4-6

Laser Capabilities		
Designator Type	**Moving Targets**	**Stationary Targets**
HGSS	**3,000 m**	**5,000 m**
RPV/ UAV	**3,000 m**	**5,000 m**
OH-58 and AH-64	**7,000 m**	**10,000 m**

3. **Buffer. When operating a laser, you must have a 15 mil buffer when lasing over a reflective surface, near personnel, or below sky line. If the personnel are moving and there is any chance that the 15 mil safety buffer will be violated, then lasing is not authorized.**

4-7 Precision Munitions

1. **Allowed Munitions. Rotational units are authorized to fire the following munitions provided the following conditions are met:**

   a. **M982 Excalibur GPS Guided Munition and M1156 Precision Guidance Kit (PGK). M777A2 and M109A6 MTOE Units are authorized to utilize the M982 Excalibur GPS Guided Artillery Round during Force on Force Operations. Prior to execution, units must possess required equipment, load proper CRYPTO, and demonstrate correct procedures to employ precision/near precession munitions in order to receive credit.**

   b. **M31 and M31A1 Guided MLRS Rocket (GMLRS). Units are authorized to utilize the M31 and M31A1 GMLRS Rocket during Force on Force operations. Units must possess and demonstrate the capability to fire these rounds prior to receiving credit.Observers must be able to demonstrate the capability to determine a mensurated grid prior to the mission being sent to the Launcher. Units that do not possess the M270A1 Launcher or M142 (HIMARS) may request GS support through the 52ID HQ$_{\overline{7}}$. MLRS and GMLRS support will be granted on a case by case basis.**

   c. **ATACMS BLOCK I, BLOCK IA, BLOCK II and M48/M57 ATACMS QUICK REACTIONARY UNITARY. Units are authorized to utilize the ATACMS family of munitions provided they possess the capability to fire them from either the M270A1 or the M142. Units may utilize the BLOCK IA ATACMS from non-GPS aided systems (M270), but they will only achieve BLOCK I accuracy. All ATACMS fires must be approved through 52nd ID.**

4-8 Close Air Support (CAS)

1. **Mission. The mission of the NTC is to provide realistic joint and combined arms training focused at the battalion and brigade level. The United States Air Force executes a simultaneous and collaborative exercise during NTC rotations, GREEN FLAG-West (GFW), to train Combat Weather, Tactical Air Control Parties (TACP), fixed-wing aircrew members, and BCT staffs. In keeping with these purposes, the focus of CAS training is on CAS execution IAW Joint Publication 3-09.3, integration of ASOS personnel with their supported units, and the utilization of available GFW assets to meet the ground commander's operational and tactical intent. The rotational unit will receive credit for the use of CAS in its battle space only when its execution is a direct result of the brigade combat team's targeting and decision-making process. CAS sorties will only result in battlefield attrition when the rotational unit employs aircraft in line with the commander's current CAS focus. CAS striking targets of opportunity outside the direction and control of the rotational unit will not receive credit for their effects. CAS sorties not utilized by the rotational unit will be retained by the division and used against division targets.**

2. **Employment. Rotational units are authorized to employ CAS in accordance with Joint Pub 3-09.03, AFI 11-214 (with all ACC supplements), COMACC EXPLAN 323, participating aircraft MCM series TTPs, AR 385-63, and NTC EXOP. Multiple sets of Close Air Support (CAS) aircraft may**

simultaneously operate in the maneuver box. All aircraft must contact CT-OISdance for clearance prior to entering or departing NTC airspace (R2502 N/E NTC Range-Complex).

3. **Terminal Control. Aircraft will operate under the direction of a qualified Joint Terminal Attack Controller (JTAC), Forward Air Controller-Airborne (FAC-A), or Joint Air Attack Team (JAAT) Air Mission Commander. Only qualified joint/coalition controllers, however, may conduct terminal control. Type 1, 2, and 3 control may be used during force on force operations. A qualified JTAC or FAC-A must use Type 1 Control procedures for all live CAS engagements unless requirement for Type 1 is waived by Raven Team chain of command and replaced with either Type 2 or Type 3 (see Live Fire Training Chapter for Live Fire Restrictions). Aircraft must be cleared to depart the IP by the final control authority (see table 4-8). A qualified JTAC or FAC-A must provide final control for targets within 3 km of the FLOT. Aircraft must receive a "CLEARED HOT" call from the final control authority on each pass prior to releasing live ordnance. CAS targets within 5,000 meters (3 nautical MILES) of any personnel must receive a visual mark (IAW AFI 11-214, A4.1.3.4.1).**

4. **Visual marks at NTC are limited to the following (IAW AFI 11-214, A4.1.3.4.1):**

    a. **2.75 inch WP/HE/SP/TP or JSLIST rockets. TP rockets require multiple release.**

    b. **20 mm, 25mm, 30mm guns TP/HEI**

    c. **105mm, 155mm HE/WP/ILA/SMK**

    d. **120mm TPCSDS, HEAT-TP-T**

    e. **FAC-A delivered BDU-33/MK-76**

    f. **IR Pointers or Laser Target Designators (LSS/LST)**

    g. **VDL Capture**

    h. **Smoke grenades delivered from rotary wing (hand tossed)**

    i. **.50 Cal**

    j. **81mm mortars HE/WP/ILA/SMK**

    k. **60mm mortars HE/WP/ILA/SMK**

    l. **40mm grenades delivered by MK-19**

    m. **AT4 84mm**

5. **GP Bombs and inert ordnance are not an acceptable mark. All ABORT calls are given in the clear (no authentication) by anyone observing an unsafe act. The JTAC/FAC-A will pass a CAS 9-line brief to the aircrew prior to the aircraft departing the IP/CP for each CAS attack. Terminal Attack Controllers use the following considerations in developing their 9-line briefing:**

    a. **FLOT and other friendlies (COLTS, Scouts, TACs etc.)**

    b. **Fire Support Coordination Measures**

    c. **Artillery and mortar locations / GTLs**

d. Airspace conflicts/ROZs

6. Self-Illumination: Aircraft released LUU and Rocket Flares are authorized. Range-to-fuse function must occur at least 500 meters away from friendly units' positions. Range-to-impact must occur at least 800 meters from friendly units' positions.

7. Restrictions: The following restrictions apply to both force on force and live fire operations: Air-to-Air engagements between opposing rotary-wing or fixed-wing TACAIR forces are not authorized within the R2502 N/E airspace. Fixed wing engagements against flying helicopters are not permitted. Aircraft will operate with available IFF systems activated at all times. The FLOT and individual positions forward of the FLOT must be marked to allow for quick aerial identification of the friendly positions during night-live CAS operations only. FAC-As and attack aircraft must confirm location of friendly forces via a "visual friendlies" call. Fixed-wing aircraft will fly appropriate tactics for the ADA threat level. VFR weather criteria is 1500'/3nm for force on force and 1500'/3nm or 500 feet above minimum release altitude (whichever is higher) for live weapons release. CAS with live ordnance may over-fly, but not "hold" over friendly troops. Cluster munitions are not authorized in LLTR or R2502 N/E. Coordinate dependent weapons (JDAMs) are authorized, however, if the appropriate weapon Safety Danger Zone (SDZ) schematic is on file with NTC Range Control. AGM-65 is authorized on Leach Lake targets 3, 4 and 5 per safe-range employment restrictions. Raven OC/Ts will direct aircraft that are unable to expend ordnance in live fire to an alternative target at Leach Lake Tactics Range that is at least 5000 meters (3 nm) from any personnel.

8. Urban CAS. CAS may conduct urban operations throughout the 2502 N/E airspace. Operations conducted over the Fort Irwin cantonment area are restricted to 10,000 feet MSL. Aircraft will be dry and have a pinned gun. Simulated strafe attacks and expendables (chaff/flares) are not authorized over the Fort Irwin cantonment area at any altitude.

9. Airspace Management. Rotational units must receive prior approval from the 52ID/ X Corps TOC/TAC to use any airspace or conduct ingress / egress outside of its sector/zone.

a. Coordinating Altitude. Coordinating Altitude (CA). 2,000K AGL is the standard CA for NTCexercises, but may change from rotation to rotation. All trainers and training units must review the exercise ACO to verify the CA for each rotation. To ensure safe operations, fixed wing aircraft will remain above the CA and in contact with CT-OISDANCE. Rotary wing aircraft will remain aminimum of 500' below the CA and in contact with DESRAD. Transitions through the CA require prior coordination with both DESRAD and CT-OISDANCE.

b. Airspace Coordination Area (ACA). Formal and informal ACAs may be used during force on force and live fire. All ACAs will be activated through the 52ID FSE. Aircraft will not under fly indirect fire gun-target lines except during force on force operations, or during MLRS shoots with 12 CTS/CC approval.

c. Lateral Separation: Indirect fires and CAS may attack different targets simultaneously if the indirect fire GTL and CAS target are coordinated by an informal/formal ACA. During live fire, CAS must also adhere to the live fire CAS minimum altitudes in paragraph 4-9.

d. Time Separation: Time Separation: When below 5000' AGL, CAS, artillery, and mortars may attack the same target provided a minimum of 30 seconds separation between the last round on the ground and the first aircraft delivered ordnance on the target. Aircraft will not violate active GTLs or live fire CAS minimum altitudes in paragraph 4-9.

e. Altitude Separation: CAS, artillery, and mortars may attack the same target simultaneously using Maximum Ordnance or ORD 1 procedures while adhering to live fire CAS minimum altitudes in paragraph 4-9. Units may use the Maximum Ordnance procedure provided

aircraft remain at least 1,000 feet above the direct and indirect fire trajectories and their effects. Units will not establish a single Maximum Ordinate over their sector/zone for an entire battle. ORD 1 procedures are authorized during live fire operations if the unit demonstrates proficiency during force on force operations and receives approval from the Commander, Operations Group. When using ORD 1 procedures aircraft will remain at least 25 degrees laterally separated from the artillery GTLs until crossing the target area.

Table 4-8 **LIVE CAS Final Control/ Target Marking Requirements**		
CAS TGT	**TAC (Terminal Attack Controller)**	**TGT MARK REQD**
Personnel less than 3 KM	**JTAC**	**YES**
Personnel 3 KM – 5.0 KM	**JTAC/FAC-A**	**YES**
Personnel > 5.0 KM	**JTAC/FAC-A**	**NO**

4-9 CAS Minimum Safe Distances

1. **Restrictions. The minimum safe distances for bombing and strafing at the NTC are:**

Table 4-09 **CAS Minimum Safe Distances (IAW JFIRE/Dec 2007)**	
Live Ordnance	**MSD – Restriction**
MK –82 (500 lbs)	**1,200 meters**
MK –83 (1000 lbs)	**1,000 meters**
MK – 84 (2,000 lbs)	**1,800 meters**
STRAFING - Final attack heading (FAH) specified in the 9-line must be oriented parallel to the FLOT **MSDs for all ordnance not listed above are IAW JFIRE/Dec 2007.**	

4-10 Artillery/Mortar Safety

1. **Certification. Unit commanders are responsible for Artillery/Mortar safety certification. Commanders will ensure that crews are certified in accordance with AR 385-63. Commanders will also ensure that a minimum of two safety certified personnel are present throughout the duration of the live fire and that safety personnel understand and follow both the NTC EXOP and the appropriate weapon systems technical manuals. Rotational artillery units will provide a Safety Certification Letter by RSOI2, signed by the Fires BN CDR, to the Wolf Team (W32/05) prior to being cleared to conduct live fire or calibration.**

4-11 Direct Fire Engagements

1. **General. Actual artillery units will occasionally be employed in the direct fire mode. OC/Ts will assess artillery (howitzer) direct fire engagements (when not equipped with MILES). They will observe whether howitzer sections conduct direct fire procedures IAW FM 6-50.**

4-12 Notional Artillery

1. **Suppressed. Notional Artillery will be suppressed if a friendly unit drives through the notional unit. If an enemy force drives through the Notional Artillery Unit, the Notional Unit will be attritted by the Fire Support TAF. Observers will receive 6 digit grids during the day and 4 digit grid locations at night through OC/T channel of the type/quantity of equipment of notional artillery that**

is LOS compromised. Notional Artillery that is visually compromised in accordance with the table below will receive 8 digit grids through OC/T channels.

	DAY	NIGHT
Unaided Observer	1.5 km	.5 km
Observer w/bino/map	5 km	3 km
Aided Observer	5 km	3 km
LRAS	10 km	7.5 km

4-13 Manual Artillery Assessment Tables

1. **Assessment. AWES is the primary method for assessing indirect fire engagements. However, in the case of AWES malfunction or the requirement to assess vehicles and personnel which are not fitted with MILES II. OC/Ts will assess casualties by applying reasonable judgment if the impact of the indirect fires is not obstructed by a building or other structure. When time allows, OC/Ts should use JWS to accurately assess BDA.**

4-14 Crater Analysis

1. **Purpose. Crater analysis is an important step toward defeating the enemy's indirect fire effort. By conducting a simple analysis of the craters produced by enemy fire and by reporting the results, soldiers can provide valuable information about the enemy. Crater analysis is the responsibility of all leaders. It is especially important during counter insurgency and or irregular warfare. Crater analysis allows units to collect battlefield intelligence, possible location of COEFOR indirect fire weapon systems, and possible types of systems and ammunition possessed by the COEFOR. It provides units a reliable procedure to enhance their counterfire ability, especially without Firefinder radar support.**

2. **Procedure. Units must perform or possess the following in order to properly conduct and receive credit for its selected procedure: Conduct the analysis in accordance with FM 3-09.12, Appendix B, FM 6-50, Appendix J, or FM 7-90, Appendix D.Units must request to perform a Crater Analysis to their corresponding OC/T or OC/T team. Units must perform any of the crater analysis techniques in the presence of an OC/T. Possess all the required equipment to perform any of the crater analysis techniques, such as declinated compass or aiming circle, stakes, wire or 550 cord, and curvature template.**

4-15 Electronic Attack

1. **Implementation. The RTU BCT may request for EA assets to support their operations. The effect(s) may be constructive or actual. The DIV EWO rep or DIV FSO will, upon receipt of the request approve or disapprove the request and issue the request to the NTC rep at CAOC NELLIS. If the asset is to be notional and the effects constructive, the FSE or ASOC (in the case of immediate requests) personnel will provide the affected areas and times to the Blackhorse TAF at the DTOC.**

2. **Requesting Procedures. All requests for electronic attack (EA) must consist of the following: DD 1972, Joint Tactical Airstrike Request, Electronic Attack Request Form (EARF), EA specific CONOP**

3. **Request Flow. BNs must submit requests to the BCT EWO for prioritization and approval. The BCT EWO must submit the products to DIV NLT 1100 the day prior to the effects for pre-planned missions. The BCT EWO will place the all request products in the NEW SUBMISSIONS FOLDER (RFI TAB) on the WARRIOR PORTAL. In the case of immediate requests, all request products must be submitted in the new format.**

4. **Jamming Control Authority. The Jamming Control Authority (JCA) is determined by the requesting BCT EWO. In most cases the JCA should be the supported BN EWO. The responsibilities of the JCA are: Participating in development of and ensuring compliance with the joint restricted frequency list, Validate and approve/deny cease-jamming requests, Maintain situational awareness of all jamming-capable systems in the area of operations, Serve as the BCT/BN commander's executive agent for developing EW intelligence gain-or loss recommendations when electronic attack or electronic warfare support conflicts occur, Coordinating jamming requirements with joint force components. Investigating unauthorized jamming events and implementing corrective measures.**

5. **JCA Communications Requirements. The JCA must have communications with the supporting asset and the supported element. The JCA must monitor both UHF and HF (and FM if the asset is communicating with the forward element directly).**

6. **Cease Buzzer Procedures. CEASE BUZZER (CB) procedures must be articulated in all EA requests to include CB FREQs (UHF/HF/FM) and JCA/JTAC call signs. All calls for CB must be verified by reason.**

    a. **Example 1: *ZAPPER 31 THIS IS RTU 16, CEASE BUZZER CODE BRAVO IOT COLLECT.***

    b. **Example 2: *ZAPPER 31 THIS IS RTU 16, CEASE BUZZER CODE DELTA, EXPERICING INTERFERNCE ON ICOMS*.**

    c. **If CB is called to deconflict interference, BUZZER ON must be called after the interference is known not to be from the asset.**

Chapter 5
Engineer

CHAPTER 5 – ENGINEER:

5-1 General

1. **Tracking. Units will provide their OC/Ts with locations of all obstacles and survivability positions. OC/Ts will use this information to ensure that all obstacles are correctly entered into the NTC-IS computer system and to track post mission battlefield restoration.**

2. **Restriction. Units will not construct obstacles that are inherently dangerous (e.g., head high, single strand barbed wire, tangle foot).**

3. **Safety. No fighting position (Live Fire or Force-on-Force) will be used if it is determined that the position is unsafe by a OC/T.**

4. **Restoration. Units will conduct post mission battlefield restoration. Battlefield restoration is an emplacing unit responsibility, defined as the clean-up or fill-in of all obstacles and survivability positions that they constructed. Restoration will begin after change of mission as directed by the DTOC. Units will complete restoration prior to the next mission unless DTOC authorizes a delay. OC/Ts will enforce and verify that all obstacles emplaced and earthworks are policed prior to the unit reporting for their next mission**

5. **Material. Units will return all obstacle materials to storage configuration (e.g. all mines disarmed and stored in containers if available) and all wire banded and palletized.**

6. **Digging. Units will fill in all survivability positions, ACE scoop areas, and antitank ditches and spread all berms and spoil.**

7. **Coordination. BLUFOR and COEFOR units will coordinate battlefield restoration through DTOC if necessary.**

8. **Delays. Only the Commander of Operations Group (COG) may postpone battlefield restoration. Additionally, the COG may suspend training if battlefield restoration is inadequate and may adversely impact on safety or future training.**

9. **Marking. All SCATMINE minefields will be marked IAW FM 3-34.210, a minimum of a single row of concertina or single strand, waist high, barbwire fence, with mine signs every 25m, and pickets**

every 15m. All minefields will have a DA1355 completed and forward thru the chain of command to 52ID TOC: ATTN ADE.

5-2 Training Demolition

1. **Preference. Live explosives are the preferred training aid at the National Training Center. When live explosives cannot be used or is not appropriate, demolition effects simulators (DES) will be used. It produces sufficient visual and sound effects to enhance battlefield realism. DES will be constructed IAW FM 3-34.214to replicate C4, Bangalore Torpedoes, Cratering Charges, and Brazier Breaches. MDI, detonation cord, blasting caps, and fuse igniters can be used during force-on-force operations to create Urban breaching Charges. Units will calculate Net Explosive Weight (NEW) and observe the surface danger areas IAW FM 3-34.214**

2. **Handling. Units will handle training demolitions in the same manner as live demolition material. OC/Ts may assess as casualties soldiers who mishandle demolitions materials.**

3. **Resupply. Units must reorder expended demolition materials through the Class V resupply system in order to receive demolitions for future missions.**

4. **Target Destruction. Amounts and placement of explosives are key factors in military demolition projects. The available formulas for demolition calculations are based on the detonation effects, the charge dimension significance, and the charge placement. Every demolition target is unique and the same charge does not work on every target. Units are required to conduct a reconnaissance of the proposed target and gather critical information to calculate the amount of explosives needed to destroy the target. Engineer OC/T verifies demolition calculations and placement of charges prior to any force receiving credit for destroying an obstacle or structure. Units must have on hand and correctly place the amount of demolition training aids calculated to receive credit for destroying an obstacle or structure.**

5-3 Improvised Explosive Devices (IEDs)

1. **General. Improvised Explosive Devices (IED) are devices that are fabricated in an improvised manner incorporating destructive materials designed to destroy, injure, distract, or terrorize. Because of continuous and innovative procedures in developing IEDs by terrorist and enemy forces in the world today, NTC attempts to keep up with those changes and replicate recent insurgent TTP's. The types of IEDs at the NTC are: Command wire (CWIED), Remote Controlled (RCIED), Victim Operated (VOIED), Vehicle Borne IEDs (VBIED), Suicide Vest (SVEST), Deep Buried (DBIED), and Explosively Formed Penetrators (EFP).**

2. **Force-on-Force Simulation. The COEFOR / paramilitary forces will simulate the five types of IEDs at NTC by using the following:**

    a. **VBIED. VBIEDs are replicated by a vehicle that utilizes some form of signature device that when activated will indicate an IED detonation to BLUFOR (e.g., SCOPIS, Smoke Pot). The minimum requirement is that there at least is a complete system, explosives (i.e., mortars, bulk explosives, or projectiles) with a triggering device present. COEFOR will not get credit for a VBIED with only a smoke pot or IEDES signature device and no explosives.**

    b. **Suicide Bomber IED (SBIED). SBIEDs are replicated by COEFOR utilizing any type of container (e.g., backpack, vest, or duffel bag) that can be carried and initiated by the suicide bomber. The device must have an audible signature device (i.e., buzzer) attached to the simulated explosives. When the buzzer sounds the IED has detonated.**

    c. **Military Munitions IED. Conventional IEDs are replicated by an IED consisting of some kind of military ordnance, most often a mortar or artillery projectile of 120mm or larger, with a functional initiation system attached. The initiation system will be attached to a signature**

device (e.g., IEDES, M80). When the signature device functions the IED functions and adjudication will be based off of the IED adjudication chart.

d. Unknown Bulk Explosives (UBE)/Homemade Explosives (HME). These devices are made in containers that prevent easy identification contents. Container examples include, but are not limited to 5gal fuel container, propane tanks, PVC pipes, or boxes. These devices will include simulated explosives and a functional initiating system, same as the military munitions IED. When the signature device functions the IED detonates and adjudication will be based off of the IED adjudication chart.

e. Explosively Formed Penetrator (EFP). The EFP will be replicated by any shaped charge forming platter with simulated explosives and initiation system. The EFP is a directional based shape charged used to penetrate armored and up armored vehicles. This type of IED is effective against the vehicle or personnel directly in line with the path of the slug created by the shape charge. The initiation system will be attached to a signature device (e.g., SCOPIS, M80). When the signature device functions the IED functions and adjudication will be based off of the IED adjudication chart.

f. RKG-3. RKG-3 is the designation of Russian series of anti-tank hand grenades. When the pin is pulled and the grenade is thrown a four-paneled drogue parachute is deployed by a spring. This parachute stabilizes the grenade in flight and ensures that the grenade strikes the target at a 90 degree angle, maximizing the effect of the shaped charge. Adjudication will be based off of the IED adjudication chart.

3. Logistics Requirements. All IED events must contain a complete system with functioning effects system. VBIED, Suicide Bomber IED, and Homemade Bombs can utilize simulated bulk explosives along with military munitions. Military munitions IED events must have military that are relevant to the simulated theater of operations munitions. All events must have a functional triggering device attached to a training blasting cap inserted into the IED. The IED event will be considered a misfire if the signature device does not function. At no time will a OC/T simulate a detonation.

4. Reduction. IEDs are reduced by qualified EOD, EOCA, and R2C2 Sapper personnel within the restrictions of their qualifications. To simulate the reduction of an IED the rotational unit must demonstrate the capability to transport a suitable charge (complete system) to the IED. The system is not primed until the OC/T verifies charge placement. Charge placement must be correct (as per R2C2 Sapper / EOCA / and EOD specifications) for IED reduction credit. Once charge placement is confirmed, the IED is removed and the rotational unit primes the charge. Firing procedures are explained in Chapter 5-12.

5. Exploitation. After the initiation of an IED, components of the IED that would not normally be recovered will be removed and a residue kit will be emplaced to facilitate the gathering of forensic evidence. Command Detonated IEDs: The command wire will be left in place. RCIEDs: At the point of detonation; a disassembled trigger device similar to the model used to initiate the device and the munitions used will be left in place.

5-4 Conventional Minefields

1. COEFOR Mines. Anti-tank mines - The COEFOR uses three types of mine replicators: the TM-89 mine shell with MES insert; the M21 plastic shell without fuse, painted tan in color; and the M15 metal mine painted tan in color. All three replicate the TM-89 mine and are used in all COEFOR conventional minefields, to include minefields executed by the obstacle detachment (OD). The predominant mine, however is the TM-89 mine shell (tan in color) with Mine Effects Simulator (MES) insert., the TM-89 mine is a magnetically and seismically influenced mine that may detonate as a vehicle passes very close without actually touching the mine.

2. **Employment. When using the TM-89 shell, M21 shell, or M15 metal mine to replicate COEFOR minefields, OC/Ts will assess a vehicle as a catastrophic kill if the vehicle drives over or straddles the mine and a mobility kill if the vehicle moves within one meter of the mine. Any troops in the open within 25 meters of a mine blast will be assessed as a casualty. OC/Ts will remove any mines that have been detonated.**

3. **Anti-personnel mines - The COEFOR uses a replica of the OZM-3 AP mine. The OZM-3 is detonated by a variety of fuses including tripwire and electrical command. When triggered the mine explodes approximately 1.5 meters off the ground. The fragmentation results in a casualty radius of 25 meters; therefore, any troops in the open will be assessed if within 25 m radius. Because of their metal content, the mine can be readily detected with de-mining equipment.**

5-5 SCATMINE

1. **The NTC battlefield allows for the full employment by opposing forces of scatterable minefields by BLUFOR and COEFOR units. This paragraph outlines procedures for minefield identification, effects and casualty assessments. Both forces will be capable of employing both artillery delivered and ground emplaced scatterable minefields. BLUFOR is capable of employing air emplaced scatterable minefields. Also, BLUFOR units are capable of employing the Modular Pack Mine System (MOPMS).**

2. **Rotational Unit Responsibilities.**

    a. **Approval. Report intention and request approval for planning of any anticipated SCATMINE minefield through DTOC.**

Table 5-5 SCATMINE emplacement authority

System Characteristics Emplacement Authority	***System Characteristics Emplacement Authority***
Ground or artillery delivered with SD time greater than 48 hours (long duration)	**The corps commander may delegate emplacement authority to division level, which may further delegate it to brigade level.**
Ground or artillery delivered with SD time of 48 hours or less (short duration)	**The corps commander may delegate emplacement authority to division level, which may further delegate it to brigade level, which may further delegate it to task force level.**
U.S. Air Force delivered (Gator), regardless of SD time	**Emplacement authority is normally at corps, theater, or Army command level, depending on who has air-tasking authority.**
Helicopter delivered (Volcano) regardless of SD time	**Emplacement authority is normally delegated no lower than the commander who has command authority over the emplacing aircraft.**
MOPMS when used strictly for a protective minefield	**Emplacement authority is usually granted to the company, team, or base commander. Commanders at higher levels restrict MOPMS use only as necessary to support their operations.**

****NOTE: EMPLACEMENT & EXECUTION AUTHORITY FOR ALL SCATERABLE MUNITIONS HAVE EITHER BEEN DELEGATED TO/OR ELEVATED TO THE 52ID DIV CDR.****

    b. **Reporting. A SCATMINEWARN will be sent to the DTOC a minimum of 60 minutes prior to execution of a scatterable minefield as a final request for release of emplacement authority. Failure to meet the 60 minute lead time requirement may result in delays in receiving execution authority.**

c. 48 Hour Duration. On an exceptional basis, both BLUFOR and COEFOR units may request and be granted authority to emplace 48-hour duration scatterable mines for any/all employment systems. 48-hour duration scatterable mines remain in effect until self-destruction and are not normally subject to suspension of battlefield effects.

Table 5-5b SCATMINE SD Windows

SD Time	SD Window Begins
4 hours	3 hours 12 minutes
48 hours	38 hours 24 minutes
5 days	4 days
15 days	12 days

d. Tracking. Units may only SCATMINEWARN the number of available loads they have for that particular system. Example – if the BCT can fire 2 ADAM or RAAM targets, then they may only have 2 open SCATMINEWARN targets at any given time.

3. OC/T Responsibilities. Upon receiving notification from DTOC, the OC/T on site will manually assess casualties if the AWES is non-operational. Ensure that the RF signature is turned off prior to any attempts to reduce the minefield (coordinate through the Sidewinder TAFF). Ensure that the RF signature is turned back on if the reduction attempt fails. Confirm that the RF signature is turned off after the duration of the minefield has elapsed before removing the blue or red wooden blocks. When the tactical situation permits, BLUFOR units (under OC/T control) will remove all blue blocks from a SCATMINE that has expired. Control. Control reduction attempts IAW Chapter 5-6.

4. Artillery/Rocket Delivered Scatterable Mines. The BLUEFOR uses a 155mm howitzer to deliver the M67 ADAM and M70 RAAM mines. Each M731 projectile contains 36 M67 mines and each M741 projectile contains nine M70 mines. The COEFOR uses the BM-21 to deliver the POM-2S AP mines and the PTM-3 AT mines. BLUFOR artillery delivered scatterable mines (ADAM/RAAM) are either 400x400 or 200x800 meters and are medium density. The COEFOR MRL delivered scatterable minefields are typically medium density (400x400 and 200x800) and may be 4 or 48 hours in duration IAW CBI/DTOC approval.

a. Employment. The RF signature will be turned on after 50 percent of the minefield has been fired and the leading enemy edge is marked. After the barber poles are set, a ground signature of approximately 960 Blue/Red wooden blocks will be placed on the ground Critter Team assigned to mark the minefield between the poles. When the minefield self-destructs the signature will be removed. During breaching operations, the RF signature will be turned off and manual assessment of casualties will be made by the OC/T on site. If bypass marking is used, the AWES RF minefield signature will continue to make assessments. The firemarker will throw five grenade simulators when the scatterable minefield self-destructs.

b. All artillery/rocket delivered SCATMINE minefields will be marked to their actual size. There will be no safety zone marking. Units should recognize doctrinal safety zone distances, understand the threat, and act accordingly.

c. Adjudication starts when the corners which define the edge or edges that face the general direction from which the enemy is approaching will be marked first:

i. 200x800m = the corner points on the long edge of the minefield, on the enemy side will be emplaced first.

ii. **400x400m = the three corner points that define the closest corner to the enemy will be emplaced first.**

Table 5-5c RAAM and ADAM Minefield Density and Size

Obstacle Effect	*RAAM*		*ADAM*		*Width (meters)*	*Depth (meters)*
	Area1	*Linear2*	*Area1*	*Linear2*		
Disrupt	**0.001**	**0.2**	**0.0005**	**0.1**	**200**	**200**
Fix	**0.002**	**0.4**	**0.0005**	**0.1**	**200**	**200**
Turn	**0.002**	**0.8**	**0.0010**	**0.4**	**400**	**400**
Block	**0.004**	**0.6**	**0.0020**	**0.8**	**400**	**400**
1Area density = mines per square meter **2Linear density = mines per meter**						

d. **If tube artillery delivers the scatterable minefield, adjudication begins when 50% of the rounds are complete on the fire mission and marking is complete. Wolf TAFF will notify DTOC and Sidewinder TAFF when 50% of Fire Mission is complete IOT allow AWES RF initiation. However, SD munition timeline begins at first rounds fired and will self-detonate at the preset SD times (4HR, 48HR, etc).**

e. **No battlefield effects signature marking of the minefield will be emplaced prior to the artillery mission being fired. If possible, the firemarker will erect a center reference pole first upon arrival on site and then move to the first corner on the approaching enemy side of the minefield. When the artillery mission is fired, the firemarker will provide the initial pyrotechnic signature (yellow and purple smoke and five artillery simulators) at the first corner location. The firemarker emplaces the first corner pole. The firemarker will then move to the second corner on the approaching enemy side and continue marking.**

f. **If AWES is available at the time the artillery mission is fired, AWES will provide adjudication for the duration of the minefield. If AWES fails, manual adjudication by a OC/T will be conducted for the remainder of the duration. If AWES is not available at the time the artillery mission is fired, manual adjudication will be conducted through the duration of the minefield.**

5. **Volcano/UMZ. Units may mount the M139 Volcano mine dispenser on M548 cargo carriers, M977 CGO HEMTT, 5 ton vehicles or UH-60 Blackhawk helicopters. The live M87 mine canister is prepackaged with five AT mines and one AP mine; the mix cannot be altered. Units will replicate the M87 canister with the M89 training canister for all Volcano operations; logistics, canister load and reload, and system canister testing. There are sufficient canisters and honeycombs at the NTC for four Volcano systems. Additional air or ground Volcano systems constitute a FORSCOM Reg 350-50-1 exception and require 160 canisters and four honeycombs per Volcano system augmentation. The COEFOR UMZ dispenses the PTM-3 AT mine and PFM AP mine. While neither the Volcano AT mine nor the PTM-3 have anti-handling devices, both are magnetic fused and therefore would detonate if moved. Therefore the mines cannot be lifted out of the way. The COEFOR UMZ minefield is dispensed in a manner similar to the BLUFOR Volcano minefield.**

   a. **BLUFOR units must process requests for Volcano canisters IAW Chapter 7-Logistics. The unit may upload the initial Volcano canisters on the M139 dispenser any time after the UBL DA Form 581 has been properly processed by the unit and verified by their OC/T. Units cannot execute Volcano minefields without the requisite number of "ready" M89 canisters uploaded on the M139 dispensers and proper systems checks conducted.**

   b. **The correct number of empty honeycombs with a properly processed and verified DA Form 581 constitutes a Volcano reload, and must be on-hand prior to a unit conducting reload operations. The unit must download the entire load of "expended" M89 canisters into the honeycombs prior to up-loading the same canisters, now "ready" on to the M139 dispensers. The empty honeycombs replicate honeycombs filled with "fired" canisters and must be backhauled to the brigade ATP.**

6. **Air Volcano Force-on-Force simulation. Air Volcano minefields will be simulated at the NTC utilizing the NTC Instrumentation System RF minefield signature. Casualty assessment is made by the NTC-IS RF signature through the vehicle mounted or individual MIK receiver. Minefields may be emplaced in one pass to produce up to a 1,100 meter linear frontage (fix/disrupt) or two passes in-depth (turn/block) for up to a 500 meter frontage. After the barber poles are set, a ground signature of approximately 960 Blue/Red wooden blocks will be placed on the ground (by OC/Ts or firemarkers) between the poles. The poles will then be removed and the only signature will be the wooden blocks. When the minefield self-destructs the mines will be recovered by OC/Ts The RF signature will be turned on, and the duration time will begin when the minefield has been completely emplaced and the leading enemy edge is marked. During breaching operations and after executing a breach lane obstacle reduction, the RF minefield will be turned off and manual assessment of casualties will be made by the OC/T on site. If bypass marking is used, the AWES RF minefield signature will continue to make assessments. The OC/T will throw five grenade simulators when the minefield expires.**

    a. **All Air Volcano minefields will be marked to either 200m x 1,100m or 400m x500m. There will be no marking of a safety zone. There is a doctrinal safety zone around all minefields which units should recognize, understand the threat and maneuver accordingly to avoid.**
    b. **Adjudication (both manual and AWES) starts when the corners which define the edge or edges that face the general direction from which the enemy is approaching will be marked first:**

        i. **200x1,100m = the corner points on the long edge of a 200 meter by 1,100 meter minefield, on the enemy side will be emplaced first.**

        ii. **400x500m = the three corner points that define the closest corner to the enemy on a 400 meter by 500 meter minefield, will be emplaced first.**

        iii. **Adjudication begins after the delivering aircraft completes its pass or passes and marking is complete.**

        iv. **No EXOP signature marking of the minefield will be emplaced prior to the initiation of the Air Volcano minefield. When the Air Volcano minefield is initiated, the controlling OC/T will provide the initial scatterable minefield signature IAW paragraph 2 and emplace the first reference stake at the initiation point. He will then proceed along the launch line, emplaces the second reference stake, and provide the EXOP signature. He will then move to the approaching enemy side of the minefield, mark those corners first, then continue marking as specified by the EXOP. On 200m x 1,100m minefields, the controlling OC/T will also emplace two poles, one meter apart in the center of the 1,100 meter sides.**

        v. **If AWES is available at the time the minefield is dispensed, AWES will provide adjudication for the duration of the minefield. If AWES fails, manual adjudication will be conducted for the remainder of the duration. If AWES is not available at the time the minefield is dispensed, manual adjudication will be conducted through the duration of the minefield.**

7. **Logistical requirements/restrictions. The unit must bring a full load of M-89 training canisters per Volcano system. Units will still draw their first Volcano load in theater. The unit must fly missions with the bottom two racks (Rack 1 and 2) loaded with 40 M-89 canister each for a total of 80 canisters. Emergency jettison squibs must be installed prior to aircraft flight. The aircraft DCU must pass a canister bit test prior to the execution of each mission. The PIC must show the OC/T that the aircraft can carry the load of mines and the proper fuel on board IAW the PPC for the mission. Ingress speed is limited to -10 performance planning for the current conditions prior to launch.**

Table 5-5d Air Volcano minefield data

Minefield Type	*Depth (in meters)*	*Frontage of Minefield (in meters)*	*Number of Strips*	*Canisters per Strip*	*Total Canisters*	*Minefields per Aircraft*
Disrupt	**120**	**278**	**1**	**40 (20 each side)**	**40**	**4**
Fix	**120**	**278**	**1**	**40 (20 each side)**	**40**	**4**
Turn	**320**	**557**	**2**	**80 (40 each side)**	**160**	**1**
Block	**320**	**557**	**2**	**80 (40 each side)**	**160**	**1**
1Area density = mines per square meter 2Linear density = mines per meter						

8. **Ground Volcano/UMZ Force-on-Force Simulation. The Volcano/UMZ minefield will be simulated by using 2"x4"x4" wooden blocks painted blue (BLUFOR) on all sides and red (COEFOR) on all sides, to replicate the actual mines. The mines will be dispensed by hand from the dispensing vehicle or supporting vehicle(s) trailing the dispenser done by the Emplacing Unit. Once the VOLCANO/UMZ has run the centerline, the vehicle(s) dispensing the blue/red blocks are not subject to assessment while dispensing the blocks. The mines (blocks) on the ground give the minefield signature and 960 blocks must be emplaced on the entire perimeter of the minefield. The OC/T will throw a hand grenade simulator when the Volcano/UMZ begins dispensing and a second hand grenade simulator when dispensing is complete. The OC/T will throw five hand grenade simulators when the four hour duration expires. Mines (blocks) must be recovered during battlefield restoration, or if the tactical situation permits, after the minefield expires. The controlling OC/T adjudicates all mine effects.**

9. **Modular Pack Mine System (MOPMS). The MOPMS is a man-portable, 162 pound, suitcase-shaped mine dispenser that can be emplaced anytime before dispensing mines. The dispenser contains 21 mines (17 AT and 4 AP).**

    a. **Force-on-Force Simulation. The BLUFOR emplacing unit will simulate MOPMS at the NTC by placing a total of 21 wooden blocks, 2"x4"x4", painted blue, next to the MOPMS trainer. The unit must demonstrate proficiency with the RCU to the OC/T on-site to receive approval to use the RCU to emplace/command detonate the minefield. Following the employment of the MOPMS, the OC/T on site detonates a grenade simulator to mark the detonation; then places the 21 blue blocks scattered out to 35 meters from the container in a 180-degree semi-circle. OC/Ts will mark the minefield initiation with one ground burst simulator. The minefield becomes active once the wooden blocks are dispensed. Vehicles and personnel become casualties if they disturb or influence the mines using non-doctrinal breach methods. The controlling OC/T adjudicates all mine effects.**

    b. **Logistics Requirements. Unit draws Division authorized quantities of MOPMS containers from TASC per each engineer company and separate engineer platoon (light platoon). Emplacing unit must have the appropriate batteries for the MOPMS dispenser and the RCU (if used). Once a battery is used to dispense mines, the battery used in the container cannot be used again. The unit must provide 21 2"x4"x4" wooden blocks, painted blue, for each MOPMS container prior to departing the DSA. The unit recovers the mines and MOPMS container upon self-destruction of the mines or continue the mission. After a MOPMS is expended, the unit must backhaul the trainer to the battalion LRP where it will be tagged by an OC/T provided that the DA Form 581 is at the LRP with the MOPMS annotated.**

10. Spider – Network Munitions System. The M7 SPIDER networked munitions is an Anti-Personnel Munitions System that provides a secure remote command and control capability of up to 1500 meters for a hand-emplaced Anti-Personnel munitions field. The Spider system can detect intruders and allows the operator to monitor, control, fire or deactivate individual munitions, a subset of or an entire munitions field from a safe vantage point. The operator can initiate lethal and/or non-lethal effects through a Man-In-The-Loop/Command Initiated mode based upon the Rules of Engagement that are in effect. The system fills the anti-personnel gap in US forces obstacle integration. The system can be used in offensive, defensive, and terrain denial operations. The munitions system consists of four major components: the remote control unit (RCU), remote control unit transceiver (RCUT), repeater, and munitions control unit (MCU).

a. Request for Planning / Execution. The Spider networked munitions system is subject to the same procedures for authority to emplace as all scatterable mine systems. Spiders must be replicated on the NTC battlefield by the Spider Training, Dispensing Set consisting of the M-92 Miniature Grenade Training Simulator (MGTS) and MCUT; if anti-personnel mines are to be used as part of the munitions field the inert M68 claymore practice kit must be used. The number of Spiders that will be allowed on the battlefield is defined by the initial allocation as stated in the 52ID operations order or the quantity of available MCUT and MGTS kits. Emplacing units must demonstrate technical proficiency by using the RCU and MCU to establish a munitions field. To request approval for planning for the Spider units must provide DTOC/Division Engineer Cell with the following information for each planned Spider employment:

i. All Spider Munitions.Spider munition Obstacle Number.

ii. Planned time of Arming / Planned timeline for safety and retrieval.

iii. Spiders emplaced in Rows

iv. 8-digit Grid location of start point and end point of each row

v. Quantity of MCU and attached munitions in that row

vi. Orientation of munitions

vii. Spiders emplaced as individual systems

viii. 8-digit grid of MCU

ix. Quantity of munitions networked with MCU

b. Orientation of Munitions. Whether emplaced in rows or as individual point obstacles, the unit must provide the DTOC/DIV ENGR with the required information, grids, and the planned time of arming as soon as this information is available. At that time, the DTOC/DIV ENGR will then give approval for planning to the unit.

c. Assessments. If dismounted elements are wearing Man Instrumented Kits (MIKS) they will be adjudicated IAW the NTC Instrumentation System and Simulated Area Weapons Effects (AWES). However, due to the majority of dismounted personnel not carrying MILES systems that interact with the Instrumentation System, OC/Ts are the primary means for adjudicating casualties from a Spider munitions field. The signature for the detonation of the Spider munitions field is a grenade simulator for each volley fired from the MCU. OC/Ts will adjudicate based off of the number of munitions attached to the MCU that is fired. An MCU with six M18 claymores attached will produce lethal effects out to 100 meters from the M18 Claymore across a frontage of 225 meters. An individual M18 Claymore attached to an MCU will provide lethal effects out to 100 meters across a

frontage of 37 meters. OC/Ts will assess personnel in the open from 0 to 50 meters from the detonated M18 at 25% KIA and 50% WIA. OC/Ts will assess personnel in the open from 51 to 100 meters with 25% WIA. OC/Ts must take into account terrain, available cover, and orientation of the M18 Claymores when assessing casualties. If the MCU only has the six Miniature Grenade Launchers (MGL) attached the effects for each MCU that is fired are 10% KIA and 25% WIA to all personnel in the open within a 32m diameter of the MCU. Again, OC/Ts on the ground will use their judgment to assess casualties based off of terrain and available cover. Each 40mm grenade fired from the MGL has a kill radius of 6 meters and casualty producing radius of 20 meters.

d. Logistics Requirements. Units draw Division authorized quantities of Spider munitions components from TASC per each engineer company. Additionally, units are authorized to use any Spider systems that were issued at home station. Emplacing units must have the appropriate batteries for the RCU and MCU. After a Spider munitions system is expended the MCU must be recovered and the attached munitions must be backhauled to the battalion LRP where it will be tagged by an OC/T, provided that the DA Form 581 is at the LRP with the munitions annotated. If the unit has additional munitions on hand the RCU and MCUs are reusable.

5-6 Reduction Drills

1. **Explosive.The MICLIC must be fully operational; electronically as well as hydraulically. The "Smokey Sam" sub caliber device will be fired to replicate the launching of the rocket and an OC/T will detonate a hand grenade simulator to simulate line charge detonation. If a sub-caliber device cannot be used, and the unit is not at fault, an OC/T will detonate a grenade simulator ten seconds after the rocket arm is raised to firing elevation to simulate rocket launch and detonate a second grenade simulator to simulate detonation of the line charge. Unprotected personnel within 200 meters of the line charge when detonated will be assessed as casualties. Once the 'Smokey Sam' has been fired, OC/Ts will adjudicate effects for the MICLIC charge. After the 62 meter standoff is taken into account, OC/Ts will remove any destroyed mines in the 14m x 100m path credited to the line charge. Any mines left in the lane by the OC/T must be removed using appropriate proofing/reduction techniques. For multiple MICLIC launches, failure to overlap cleared areas from successive launches will result in the OC/T assessing vehicles in the uncleared areas. Minefields may not be considered to be completely reduced until the lane has been proofed by a Mine-Clearing Blade (MCB), Mine-Clearing Roller (MCR), ACE.**

2. **Smokey Sam Procedures. Smoky Sam sub-caliber devices will be transported inside their inner packing (e.g., foam containers) or they will be unpacked and placed in storage containers so they do not roll or bounce around. Units must comply with these transportation guidelines to prevent broken fins, damaged igniters, moisture on the base of the rocket and damage to the frame, which all contribute to misfires of the Smoky Sam sub-caliber device.**

3. **Safe Handling.All pyrotechnic devices employed at the NTC are explosive in nature and produce extreme heat. This presents a hazard to both personnel and equipment. Units will comply with all directions and safety warnings printed on the Smoky Sam sub-caliber device. No spark or flame-producing items will be used within 50 feet of the Smoky Sam sub-caliber device. Do not store Smoky Sam sub-caliber devices with flammable or combustible material. All pyrotechnic safety devices (e.g. shunting wires) will remain in place until the device is initiated.**

4. **Train-up. Units must conform to the following train-up procedures before employment of Smoky Sam Sub-caliber device in force-on-force operations:**

    a. **Inspect the Smoky Sam sub-caliber device for damage (nicks, cuts, dents, moisture).**

b. **All components of the MICLIC launcher must be present regardless if mounted on a trailer or AVLM.**

c. **Operator's manual (-10) with all current changes must be available.**

d. **PMCS must be completed to -10/-20 standards and a DA Form 5988E or 2404 properly filled out.**

e. **All MICLIC crews must know misfire procedures and safe distance requirements.**

f. **Units must conduct a training/verification firing, with all MICLIC crews present, prior to first force-on-force mission.**

g. **Unit (OC/T) will be notified of scheduled training and verification firings.**

h. **Surface danger zones (SDZs) must be calculated as if firing a live MICLIC rocket and line charge.**

5. **If the Smoky Sam sub-caliber device is not used or the unit fails to conduct required train-up, the alternate provisions of the NTC EXOP will be in effect for MICLIC employment. Lack of preparation/training on the Smoky Sam sub-caliber device may result in a higher misfire rate.**
   a. **Employment/Safety during Firing.**

   b. **Units will implement live rocket and line charge MICLIC safety procedures during employment.**

   c. **Units will prepare Smoky Sam sub-caliber devices at the engineer assault position.**

   d. **Units may not use the Smoky Sam sub-caliber device if dismounted Soldiers are within the SDZ. The unit OC/T will detonate a grenade simulator to provide ground signature of rocket launch.**

   e. **Units will not fire the Smoky Sam sub-caliber device if damage to the rocket occurs during transportation.**

   f. **The unit OC/T will make the final check to ensure the area is safe before the Smoky Sam sub-caliber device is fired.**

6. **Mechanical. Units may use any type blade asset to reduce anti-tank ditches and berms or move other physical obstacles. Units may not use the "bull through" or "push through" technique, such as pushing a non-mission capable or destroyed vehicle, to breach minefields. If a vehicle is destroyed in an existing lane, it is considered to be blocked by a burning hulk. The unit must execute proper doctrinal reduction/clearing techniques to establish a bypass at a safe distance from the destroyed vehicle to allow for continued use of the lane.**

7. **Mine Clearing Blade (MCB). The MCB will clear a lane through a minefield. If the MCB does not maintain appropriate spoil on the blades (up to the top of the moldboards), the first mine that comes in contact with the MCB will destroy the blade on the appropriate side of the tank. OC/Ts will use a hand grenade simulator to replicate the mine's detonation of the blade. The second mine that comes in contact with the MCB on that side of the tank will destroy the tank. In this case, an OC/T will manually assess the tank as a Catastrophic Kill. Additionally, if the MCB comes completely off the ground the tank will be assessed as a catastrophic kill if a mine is encountered by the tank. If the main gun of the tank is not traversed to the side during plowing, and a mine is encountered by the tank, the tank will be assessed as a firepower kill upon completion of the breach. It is recommended that the MCB be set at the 8" depth setting for peacetime (e.g., training)**

operations. This reduces wear and tear on the MCB and M1A1; however, the chain of command can authorize use of the 10" and 12" depth settings based on METT-T analysis.

8. **Mine Clearing Roller (MCR). MCRs are best used to proof lanes in obstacles breached by other means, such as the MICLIC or MCB. If units use the MCR to detect, proof or reduce minefields, the following applies:**

    a. **ACE/D-7 DOZER/DEUCE. These blade assets may be used to reduce a minefield. The blade must maintain enough spoil to prevent blade to mine contact. If appropriate spoil is not maintained and a mine contacts the blade, the blade is destroyed and the vehicle can no longer be used for breaching operations. The OC/T will throw a hand grenade simulator and manually assesses the vehicle as a catastrophic kill.**

    b. **M1 Tank Mine Roller. Conventional Minefields: Each roller bank can withstand two mine strikes. The second mine strike on the same roller bank will destroy it (each mine encounter is signified by a hand grenade simulator). If the tank/MCR continues and a third mine is encountered on the side of the destroyed bank, then the tank is assessed as a catastrophic kill. In addition, a TM-89 (OPFOR MES mine) which passes between the roller banks also catastrophically kills the tank, unless the improved dog bone assembly is used.**

    c. **Artillery Delivered Scatterable Minefields: Purple smoke will be thrown when the MCR is 100 meters from the minefield as per Chapter 5-5. A hand grenade simulator will be thrown when the MCR reaches the forward edge of the minefield signifying its first encounter with a mine. If the MCR continues to move forward, it will be assessed as a catastrophic kill by the O/C after it has traveled approximately 200 meters.**

    d. **Air Volcano: Purple smoke will be thrown when the MCR is 100 meters from the minefield. A hand grenade simulator will be thrown when the MCR reaches the forward edge of the minefield signifying its first encounter with a mine. If the MCR continues to move forward, it will be assessed as a catastrophic kill by the OC/T approximately 80 meters into the minefield.**

    e. **Volcano (Ground)/UMZ/ MOPMS: Each roller bank can withstand two mine strikes. The second mine strike on the same roller bank will destroy it (each mine encounter is signified by a hand grenade simulator). If the tank/MCR continues and a third mine is encountered on the side of the destroyed bank, then the tank is assessed as a catastrophic kill. In addition, a full-width (i.e., tilt rod or magnetic influenced fuse) AT mine which passes between the roller banks also catastrophically kills the tank, unless the improved dog bone assembly is used.**

    f. **The tank that the MCR is attached to will be assessed as a Fire Power Kill if the MCR makes contact with a mine while the gun tube is not traversed to the side or rear**

9. **Assault Breacher Vehicle. The Assault Breacher Vehicle (ABV) with the Full-width Mine Plow (FWMP) attached is capable of reducing lanes through a minefield. During reduction operations the ABV must maintain adequate spoil in front of the FWMP to prevent contact with mines. The FWMP is designed to dampen and survive the blast of pressure-fused AT mines. The FWMP can sustain three AT mine strikes before it becomes non-mission capable. The OC/T on the ground will detonate hand grenade simulators as each mine detonates on the FWMP. If the ABV continues clearing after the third mine strike then the vehicle will be manually assessed as a Catastrophic Kill by the OC/T on the ground. If the FWMP comes completely off the ground during reduction operations the ABV will also be assessed as a Catastrophic Kill if it encounters a mine. An ABV with the combat dozer blade (CDB) attached is not recommended for use in conducting reduction operations due to the CBD width being less than that of the ABV track width. The ABV will be assessed as a Catastrophic Kill by the OC/T on the ground if an ABV with the CDB attached**

comes in contact with a mine. The OC/T will throw a hand grenade simulator to replicate the detonation of the mine.

10. **Stryker Mine Plow. The Engineer Squad Vehicle (ESV) Stryker Mine Clearing Blade (MCB) is not capable of reducing or proofing minefields with buried mines. The MCB does not create spoil in front of the blade and using chains to prevent mine contact with the MCB. During reduction operations if the MCB comes in contact with a mine that side of the MCB is destroyed. The OC/T on the ground will use a grenade simulator to replicate the mine strike. If the ESV comes in contact with a mine on the same side that the MCB was destroyed on will be manually assessed as a Catastrophic Kill by the OC/T on the ground.**

11. **ESV. The ESV can also mount a Light Weight Mine Roller (LWMR) to support mobility operations. The LMR is recommended to only be used during proofing operations. If a ESV with a LWMR attached is used to detect, proof, or reduce minefields, the following applies:**

    a. **Coventional Minefields. Each roller bank can withstand one mine strike. The mine strike on the same roller bank will destroy it (each mine encounter is signified by a hand grenade simulator). If the ESV/LWMR continues and a second mine is encountered on the side of the destroyed bank, then the ESV is assessed as a Catastrophic Kill. In addition, a TM-89 (OPFOR MES mine) which passes between the roller banks also catastrophically kills the ESV, unless LWMR is configured for full-width proofing**

    b. **Artillery Delivered Scatterable Minefields: Purple smoke will be thrown when the LWMR is 100 meters from the minefield as per Chapter 5-5. A hand grenade simulator will be thrown when the LWMR reaches the forward edge of the minefield signifying its first encounter with a mine. If the LWMR continues to move forward, it will be assessed as a catastrophic kill by the OC/T after it has traveled approximately 150 meters.**

    c. **Air Volcano: Purple smoke will be thrown when the LWMR is 100 meters from the minefield. A hand grenade simulator will be thrown when the LWMR reaches the forward edge of the minefield signifying its first encounter with a mine. If the MCR continues to move forward, it will be assessed as a catastrophic kill by the OC/T approximately 50 meters into the minefield.**

    d. **Volcano (Ground)/UMZ/ MOPMS: Each roller bank can withstand one mine strike. The second mine strike on the same roller bank will destroy it (each mine encounter is signified by a hand grenade simulator). If the ESV/LWMR continues and a second mine is encountered on the side of the destroyed bank, then the ESV is assessed as a catastrophic kill. In addition, a full-width (i.e., tilt rod or magnetic influenced fuse) AT mine which passes between the roller banks also catastrophically kills the ESV, unless the ESV is configured for full-width detection.**

    e. **Conventional Minefields. Manual reduction techniques will be conducted IAW unit SOP. When grappling, if a grappling hook hits a TM-89 or OZM-3 mine, OC/Ts will assess the mine as destroyed along with the grappling hook and a small portion of the grappling hook line; due to anti-handling devices. The "lassoing" technique, thrown or placed around either COEFOR mine, incurs the same anti-handling and casualty radius adjudication/assessment as described in the NTC EXOP. In addition, every time a TM 89 mine is moved using the lasso technique 15 feet of rope will be destroyed. When using explosives, at least a 1 pound charge, must be placed next to but not touching the mines.**

    f. **Anti-tank mines. OC/Ts will assess casualties when soldiers fail to take appropriate safeguards against the TM-89/TM 89 MES mines' anti-handling characteristics. During manual reduction, if soldiers conduct the battle drill correctly and clear the appropriate lane width, OC/Ts will disarm and remove all TM-89/TM-89 MES mines from the lane prior to a vehicle moving through the lane.**

g. Antipersonnel mines. Proper grappling techniques of trip-wires will result in the grappled trip-wired AP mines being detonated without casualties (i.e., grappling hook has 60 meters of line attached, soldiers seeking cover after throwing hook, soldier moving to the end of the excess rope before pulling hook towards him and throwing the hook three times before moving to the end of the grappled area to begin process again). Failure to adhere to this procedure will result in an OC/T casualty assessment of the grappler.

12. SCATMINE Minefields.

a. Antipersonnel Mines. Proper grappling techniques will result in the AP mines being detonated without casualties (i.e., grappling hook has 60 meters of line attached, soldiers seeking cover after throwing hook, soldier moving to the end of the excess rope before pulling hook towards him and throwing the hook three times before moving to the end of the grappled area to begin process again). Failure to adhere to this procedure will result in an OC/T casualty assessment of the grappler. For the MOPMS minefield, the OC/T will remove the MES mine when the soldier has successfully cleared the AP mine.

b. Antitank Mines. Only a line main will be used to destroy the AT mines once the AP mines have been cleared. One explosive charge is required on the line main per 30 meter depth of the minefield: (Example: if the Volcano/UMZ makes one pass, four charges will be required. The OC/T on site will direct where the charges must be placed).

c. Command Detonation. If the MOPMS was emplaced using the RCU, then the RCU can be utilized to command detonate the mines. The RCU must be within 1 km of the minefield.

13. Logistics Requirements. Units draw Division authorized quantities of MICLIC munitions components from TASC and the ASP per each engineer company to include the required tubs, launch rails, electric matches (DODIC MN60), and Smokey Sams (M27 DODIC L715). Additionally, units are authorized to use any MICLIC systems that were issued at home station. Emplacing units must have the appropriate cables and BII for the system. Additionally units will require a 30 foot wire with a negative and positive line to attach to the electric match. All systems will be verified by the OC/T during RSOI and/or before use. After a MICLIC munitions system is expended the MICLIC components must be recovered and the attached munitions must be backhauled to the battalion LRP where it will be tagged by an OC/T, provided that the DA Form 581 is at the LRP with the munitions annotated. If the unit has additional munitions on hand the tubs, launch rail, and Smokey Sams are reusable. The only component that is not reusable will be the electric match (DODIC MN60). The following NSN will cover both the Smokey Sam and electric match (NSN: 1375-01-353-1084) for request and draw.

5-7 Digging

1. PWU. All units (Training and tenant) will ensure all digging or excavation equipment is equipped with the Proximity Warning Unit (PWU) during RSOI. The PWU is a GPS enabled warning system that will alert the operators when they are operating in the vicinity of buried cable or utilities.

2. Safety. All training units will comply with no-dig and controlled dig areas listed in Chapter 1 - Administrative. Units will not dig dismounted fighting positions in Restricted/No Dig areas. Digging to create survivability positions must comply with requirements outlined in Chapter 1 – Administrative.

5-8 Road Craters

1. General. BLUFOR and COEFOR engineer units can create road craters (the number of COEFOR craters is specified by CBI) using shape and cratering charges, or with assigned mechanical assets, where digging is permitted. Road craters will also be created upon successful detonation

of an IED placed inside of a culvert. Once executed, mark the perimeter of the crater with four orange road cones, at the corner points, with engineer tape between cones. A tripod of three U-shaped pickets wrapped in engineer tape marks the center of the crater. A sign indicating a road crater can be hung at the site. OC/Ts will direct the unit's emplacement of the perimeter marking based upon emplacement and quantity of demolitions and soil conditions. The unit is responsible for providing and erecting the required pickets and concertina for marking. For road craters located on MSR/ASRs units need to erect warning signs out at least 50m from the crater in both directions to ensure vehicles do not strike the marked crater. Warning signs will be visible in both daylight and hours of limited visibility. Upon completion of the road crater the grid location and MSR/ASR that the crater is located on must be called up to the DTOC to ensure that OC/Ts and contractors circulating the battlefield are aware of the location.

2. **Reduction. Units may reduce Road Craters (RCs) using a blade asset, tactical bridge, or any tracked vehicle. Vehicles with mine rollers and plows cannot reduce RCs. In the case of simulated RCs (RC with perimeter marked with four orange road cones and center with U-shape picket tripods), blade assets, any vehicle with a front blade, and tracked vehicles move to the edge of the obstacle and replicate reduction by continuously moving forward and backward for five (blade asset) or ten (other vehicle) minutes. The AVLB must actually place the bridge across the simulated or actual gap. A squad must be on site for 30 minutes with at least 6 each D/handle shovels to breach a road crater before the OC/T will remove the pickets and engineer tape simulating the crater.**

5-9 Weapons Cache

1. **General. Enemy weapons caches are present on the battlefield from stockpiling ammunition over the years. Units that discover these caches may take possession of them to deny the enemy access to them.**

2. **52ID Guidance. Units taking possession of Captured Enemy Ammunition (CEA) must follow 52ID guidance on weapons caches. Division may allow for immediate destruction or direct the establishment of a Captured Ammunition Holding Area (CAHA) until later disposal is authorized.**

3. **Movement & Storage. All ammunition will be treated as if it had the same weight and mass as the ammunition it represents. For example, if the unit discovers a crate of mortar rounds, it must be carried by two personnel and stored IAW storage compatibility codes.**

4. **Replication. Sandbags will not be utilized at any time to simulate a weapons cache by COEFOR. COEFOR either has the rounds to simulate the cache or there is no cache. One round will not represent more than one round.**

5-10 Wet Gap Crossing (Keep for crossing "NOTIONAL" wet gaps)

1. **General. Due to extreme current velocity, BLUFOR and COEFOR units are not capable of fording wet gap crossings at the National Training Center.**

2. **Assessment. OC/Ts will assess any BLUFOR or COEFOR vehicle that enters the gap as a mobility kill. Units will recover mobility kill vehicles IAW Chapter 8. Upon proper execution of recovery procedures, OC/Ts will immediately reconstitute the vehicle.**

3. **Bridging. BLUFOR units may request bridging assets from division once the majority of the BCT has crossed the gap. Submit requests for support via FM to the 52ID TOC (ATTN: ADE).**

4. **AVLB. The Armored Vehicle Launched Bridge was designed to launch and retrieve a class 60 bridge. The main body is either based on the M60 or the M48 tank assembly. Used during combat, an AVLB is a folding portable bridge that is transported on the top of a tank chassis. The AVLB vehicle carries a crew of two. It is powered by a 750 HP Diesel Engine. The bridge and vehicle total**

weight is 58 tons. Unfunded improvements are available in the areas of bridge, suspension, hydraulics, final drives, electrical, and water rations heater. These improvements will allow the AVLB to keep up with current Abrams Assault Force. The Armored Vehicle Launched Bridge (AVLB) only supports Abrams tank units using a caution crossing at reduced gap length (15 meters) and at a reduced crossing speed. The M60A1 Armored Vehicle Launched Bridge entered the Marine Corps inventory in the late 1980s. Current plan has the AVLB in use through 2015 and beyond. The WOLVERINE will replace the AVLB in the Engineer combat vehicle inventory. The AVLB is a turret-less M60A1 with a metal bridge that folds in half mounted on top. Through a special hydraulic system the bridge is raised to a vertical position and then extend forward opening as it proceeds forward. This is manipulated by a system of hydraulics worked by the driver. The TC serves as a ground guide second set of eyes. The M60A1 AVLB is an armored vehicle used for launching and retrieving a 60-foot scissors-type bridge. The AVLB consists of three major sections: the launcher, the hull, and the bridge. The launcher is mounted as an integral part of the chassis. The bridge, when emplaced, is capable of supporting tracked and wheeled vehicles with a military load bearing capacity up to Class 60. The bridge can be retrieved from either end. The roadway width of the AVLB is 12 feet, 6 inches. Bridge emplacement can be accomplished in 2 to 5 minutes, and retrieval can be accomplished in 10 minutes under armor protection. When unfolded, it can span up to 60 feet while supporting 70 tons of equipment. The AVLB spans a 15m gap for Military Load Class (MLC) 70, and spans an 18m gap for MLC 60.

5. **WOLVERINE. The WOLVERINE (Formerly the Heavy Assault Bridge) is an armored vehicle designed to carry, emplace, and retrieve an assault bridge capable of supporting 70 ton loads such as the M1A2 main battle tank. The Wolverine is a combat support system which integrates advanced bridging, hydraulic and electronic control capabilities into a single survivable system. Wolverine fills the need for a combat gap crossing capability with the same mobility, survivability, and transportability as the M1 Abrams tank. WOLVERINE is to be a one for one replacement for the Armored Vehicle Launched Bridge (AVLB) in select heavy divisional engineer battalions, armored cavalry regiments and heavy separate brigades. The WOLVERINE consists of an M1 Abrams tank chassis modified to transport, launch and retrieve a Military Load Class (MLC) 70 bridge across gaps up to 24 meters wide. WOLVERINE will be air-transportable in the C-5A aircraft and will be comparable in mobility and survivability to the Abrams tank. A crew of two MOS 12B will operate the system. WOLVERINE will provide the Army's Digital Division with mobility support (i.e. assault bridging) for Decisive Operations IAW Army Vision 2010. The WOLVERINE provides the dominant maneuver force with the capability to span gaps up to 24 meters (m) with little or no loss in momentum. The bridge, made of four interchangeable sections, is 26 m long, 4 m wide, weighs 10,886 kg (12 tons), and is required to permit crossing of a heavy task force consisting of Military Load Class (MLC) 70 vehicles moving at 16 km/hr. The hull will be based on the future M1A2 System Enhancement Package (SEP) chassis modified to support a two-man crew and the bridge launcher assembly. The crew can launch the bridge while under armor protection from either crew position in five minutes after reaching the crossing site and can retrieve it from either end in ten minutes. The WOLVERINE will retain significant compatibility with the M1A2 fleet. The dominant maneuver force will support the WOLVERINE's bridging operations with ongoing direct and indirect fire and air support. The WOLVERINE will directly replace the existing Armored Vehicle Launched Bridge in selected engineer companies of mechanized battalions, armored cavalry regiments, and heavy brigades. The WOLVERINE is employed as an integral part of the M1A2 SEP/M2A3 equipped digital maneuver battalion task force. WOLVERINE as part of the Breach Force and supported by friendly direct and indirect fires, will provide a 24 meter one way gap crossing capability for MLC 70 normal crossing loads with minimal preparation and with little or no loss of task force momentum. The bridge structure will be durable enough to withstand 5000 crossings of 70-ton vehicles and be launched and retrieved at least 2200 times without major repair. Once the bridge is employed the 26 meters, the launched bridge can support a 70 ton vehicle moving at 16Km/h across gaps up to 24 meters wide. The wolverine allows the heaviest of vehicles to cross craters, ditches, and damaged bridges at combat speed.**

6. **Marking. BLUFOR units will mark crossing sites to simulate permanent bridging assets. Units will mark a left and right hand-rail with pickets, white engineer tape, and chem-lites for night marking.**

5-11 Unexploded Ordnance (UXO)

1. **General. The NTC has both real world and training unexploded ordnance on the battlefield. To ensure the safety of everyone and proper training for the rotational unit the following procedures are in place.**

    a. **Safety. For safety purposes soldiers will consider all UXO found on the NTC battlefield as live. Even blue painted training ordnance can have explosive hazards associated with them and thus should not be handled by untrained soldiers (examples include spotting charges in 2.75" hydra sub-munitions and practice bombs).**

    b. **Restrictions. All soldiers must abide by maneuver and excavation restrictions IAW Ch 1 of the EXOP.**

    c. **Contact. Soldiers will not touch, run over, or disturb UXO for any reason.**

    d. **Reporting. Any soldier spotting an UXO will perform the following measures:**

        i. **Prepare a standard UXO Spot Report (Ref STP 21-1-SMCT) and forward the report to Range Support IOT request Fort Irwin EOD support.**

        ii. **Marking. Mark all UXO using the NATO UXO markers or, as an alternative, with pickets or stakes. Place chem-lights and engineer tape three (3) feet off the ground so that they are visible from all approach routes.**

2. **EOD Support. The rotational EOD unit in support of the BCT will respond to all requests for EOD support in the training areas. The post EOD unit will not be contacted until after the rotation ends, unless immediate danger to RTU TAA, personnel or equipment cannot be mitigated.**

    a. **Live: If the EOD unit determines that the ordnance encountered is live, the rotational unit will construct protective works if required. The RTU will conduct UXO Spot Report (Ref STP 21-1-SMCT) to Range Support IOT request Fort Irwin EOD support.**

    b. **Training: EOD Companies, both RTU and Fort Irwin EOD Company, will treat all training munitions as actual munitions and Fort Irwin EOD Unit will conduct all necessary procedures to mitigate or eliminate the UXO hazard.**

    c. **Scrap: EOD Companies will remove scrap ordnance out of the immediate area to eliminate the confusion of whether it is live or not.**

    d. **52ID Control. When required the EOD Company becomes OPCON to 52ID to clear Granite Pass. Upon the completion of the Granite Pass sweep the EOD unit is released back to BCT control.**

5-12 Live UXO/IED Demolition Procedures

1. **Live Demo. The rotational EOD/EN units are authorized to utilize live Class V demolition materials during force on force and live fire for training incidents.**

2. **SDZ & TCP. The rotational unit will clear the SDZ for the explosives being utilized in the destruction. The unit will set up TCPs to stop all traffic into the SDZ; this includes OC/T vehicles and contractors.**

3. **Clearance. After the SDZ and TCPs are established, the rotational unit calls their chain of command to go red direct. This request must go all the way to the DTOC for approval. The**

rotational BCT does not have the authority to authorize red direct for live demolitions. Simultaneously the demolition qualified OC/T calls ZULU TAC to request red direct status. If ZULU TAC is not operational then qualified OC/T will contact Sidewinder TAFF and DTOC to go red direct.

4. **Execution. Upon receipt of red direct from their chain of command and final approval of the Engineer OC/T on the site; the rotational unit may detonate the explosives.**

5. **Verification. After the detonation and verification of the disposal by the rotational unit and the Engineer OC/T, the rotational unit will call their chain of command with a green and clear and the Engineer OC/T will call Sidewinder TAFF/DTOC with green and clear.**

5-13 Counter RCIED Electronic Warfare Devices (CREW)

1. **Draw. BLUFOR has the ability to draw CREW devices for the BCT from TSD/CI2C personnel.**

2. **Distribution. The distribution of these devices is up to the rotational BCT.**

3. **Training. TSD/CI2C will provide up to 450 systems to the BCT. Once the BCT decides on which vehicles will have the CREW devices installed, the unit will coordinate with the TSD/CI2C personnel for the installation of the devices along with the operator training giving by the TSD/CI2C personnel.**

4. **Employment. If the CREW device is functioning properly some RCIEDs will not detonate. If the CREW device is not functioning properly or the IED is not on the same frequency as the CREW then the IED may detonate. If the IED detonates and the vehicle is assessed as a catastrophic kill the device is also destroyed. The device can also be damaged as a part of SBD if the OC/T on the ground chooses. RCIEDS that use the 315MHZ will have a common interface device that will cause the device to malfunction if training devices are utilized properly.**

5. **Restrictions. Vehicles that are using the training Dukes systems will be able to use their SINCGAR radios in the Frequency Hop (FH) mode in order to replicate the jamming effect these systems will have on BLUFOR communication. Warlock red/ green will no longer be installed.**

6. **Resupply. The unit can request another device in the same manner as requesting the replacement vehicle. There will be two crew members from CI2C going from FOB to FOB to replace systems on the hour.**

5-14 Robots

1. **Draw. BLUFOR has the ability to draw robotic equipment for the BCT from the TSD/CI2C Personnel.**

2. **Distribution. The EOD robots are for the EOD Companies to draw. All other robot distribution is up to the rotational BCT.**

3. **Employment. The robot will only be employed within the usage limits of the equipment and when an OC/T is present to observe the operation. There will be no simulated use of the robots.**

4. **Assessment. The robot will be assessed as a catastrophic kill if an IED is detonated within 5 meters. The robot will be assessed as mobility kill if an IED is detonated between 5 and 15 meters. The robot will no longer be able to function properly, but will be able to move, if an IED is detonated between 15 and 25 meters.**

5. **Vehicle Assessment. If the system is in a vehicle that becomes a catastrophic kill the system will also be destroyed. The system can be transferred from vehicles with mobility, communication, or firepower kills under OC/T supervision.**

6. **Resupply. The unit can request another device in the same manner as requesting the replacement vehicle.**

5-15 Road Culverts

1. **General. All culverts inside of the training area are in play and usable by the COEFOR for the emplacement of IEDs. A number of culverts have had Culvert Protection Systems (CPS) placed on them to deny COEFOR tampering. The CPS have doors cut in them to allow for access without the destruction of the systems. These systems are to be considered as complete and the COEFOR must have the required materials on hand (i.e. hacksaw, acetylene torch, etc) to effectively tamper with the CPS. The BLUFOR may use any non-permanent means, to exclude padlocks, to prevent the tampering of the CPS. OC/Ts will ensure the enforcement of this standard and that any wire obstacles constructed are in compliance with Ch.5-1.**

2. **IED Replication. COEFOR must remain in place at the culvert long enough to account for the time it would take to tamper with the system before emplacing any IEDs. If the COEFOR are only using hacksaws they must remain on site for 30 minutes. If an angle grinder, acetylene torch is used then they must remain on site for 15 minutes. Once the CPS has been defeated the COEFOR must ensure that the appropriate CBI is emplaced inside of the culvert to provide the visual indicators of an emplaced IED. Outside of the culvert the COEFOR must place an IED simulator to give the BLUFOR and OC/T a visual indication of when the culvert inside of the IED was detonated. This will assist in the adjudication of vehicle casualties and the overall effectiveness of the IED. If the COEFOR does not have the capability to provide an external signature then the Palehorse OC/T must provide this signature.**

Chapter 6
Air Defense

Chapter 6
AIR DEFENSE:

6-1 COMMAND AND CONTROL

1. **Airspace Control Plan: The Airspace Control Cell (DTOC) is responsible for developing a complete Airspace Control Plan. The Airspace Control Order (ACO) and Air Tasking Order (ATO) will be published at 1800L hrs daily and distributed to all agencies. The Special Instructions (SPINS) will be published once on RSOI 3 and be updated as required. The ACO will be distributed daily via TAIS and posted on the Warrior Portal.**

2. **BLUFOR. BLUFOR Air Defense assets are available when requested by a Request For Forces (RFF) memorandum. The request will be sent for Air Defense Assets through Rotational Units Chain of Command. These assets will normally consist of 1-2 Sentinel Radar systems and teams as well as 6-24 Avenger systems and teams.**

3. **COEFOR. COEFOR Air Defense assets, if any, will be outlined in the OPORD received during RSOI. A Request For Forces (RFF) memorandum will need to be sent for Air Defense Assets through the Rotational Units Chain of Command.**

6-2 AIRCRAFT

1. **Rotary Wing. Types of BLUFOR RW are based on FORSCOM Reg 350-50-1 and approved troop list. During Force on Force (FoF) potential Air Threat exists. All BLUFOR RW must be MILES instrumented.**

2. **Fixed Wing. BLUFOR fixed wing aircraft support is based upon availability. All services routinely support blue forces with CAS, to include ISR assets through the GREEN FLAG-West program at Nellis AFB.**

3. **Unmanned Aerial Systems (UAS). The coordination and planning must be conducted in an identical manner. UAS coordination measures will be included in the daily ACO. Units will conduct UAS operations IAW the following guidelines.**

4. **Airspace Coordination: The Brigade must coordinate for UAS airspace just as it would for any other aerial asset. The brigade ADAM/BAE cell is responsible for submitting a request by 1000hrs the day prior to execution of the mission and must include the following information. This information must be included into the Airspace Coordination Order. Units must process "Immediate" request in the same manner as other brigade aerial assets, i.e., helicopters. The Immediate request must meet the following criteria: Troops in Contact (TIC), Indirect Fire, Cordon and Search, High Value Target (HVT), Division Directed Mission, battery defense, PAA reconnaissance and PR. Approving authority for an immediate mission is AC2 (DTOC). Request airspace control measures (ACM) (Figure 1- Shadow Airspace Request, Figure 2- Raven Airspace request) through the DTOC by 1000 hours the day prior to execution (air routes, air corridors, loiter boxes, ROZ). RAVEN operations are not authorized unless ACMs are submitted to Division for approval unless it's a immediate request.**

6-3 AIR DEFENSE

1. **Active Air Defense. A valid engagement is determined when the gunners acquire, track and properly fire the weapon system at the target when within range. Gunners must have operational systems to be able to engage, MANPADS Stinger and Avenger Stinger Weapon Systems must fire the designated white marked ATWESS cartridge to achieve a valid engagement. The maximum effective range of the MANPAD Stinger MILES is 3750 meters for rotary, 5000 meters for fixed wing aircraft and 500 meters for UAS. The maximum effective range of the and Avenger Stinger MILES is 5000 meters for both rotary and fixed wing aircraft and 1500 meters for UAS. OC/Ts will replicate the firing of an ADA weapon system with a white star cluster when available.**

2. **Passive Air Defense. Passive air defense measures are monitored by both air defense OC/T's and maneuver CO/TM OC/T's. Use of passive air defense measures such as obscuration, dispersion, and other limiting measures impact on the assessment of BDA during air attacks.**

3. **Early Warning. Early Warning is provided predominately by the rotational unit's organic early warning systems (i.e., Sentinel radar). This cell in coordination with W16 will replicate the early warning functions of Division through theater. Under these circumstances, primary means of transmitting early warning to the BCT is the digital Sensor Broadcast Net with FM transmission being the alternate. If the unit does not have organic radar, early warning will be transmitted over the FM Division Early Warning (DEW) net in the format listed below:**

   FM Division Early Warning Format
   Local AD Warning (i.e., Dynamite)
   Track Update (Track designator ___)
   Type A/C
   Friendly/Hostile/Unknown
   Location (4 digit grid)
   Heading

4. **Radar used to acquire aircraft for early warning purposes and that are operating in the competitive zone are required to have MILES and be instrumented. If they cannot be instrumented then an OC/T is required to update TAF with their location so they can be players positioned.**

5. **ADA Operations Forward of LD. Avenger / MANPADS/EW sensor teams may be positioned forward of the line of departure/line of contact depending on the tactical situation and intent of the Brigade commander. The following rules of engagement apply to AD units operating forward of the LD/LC.**

6. **The basic MILES system must be operational and capable of being killed.**

7. **Dismounted and Mounted teams must be escorted by an OC/T and have the following equipment: Operational communications equipment, MIK Vest, DCI (CT-OIS tracking), 2 days of supply (class I & water).**

8. **During air assault operations, space for an OC/T (for each team) on the aircraft must be provided. See above for equipment list for dismounted teams.**

9. **Two teams located forward of the LD may be covered by one OC/T, however, the teams are required to remain within 300 meters of each other. This ensures the OC/T is able to rapidly respond in the event of an accident and can adjudicate engagements (aerial or ground).**

10. **These requirements will ensure safe operations and will provide coverage for ground/aerial engagements. ADA aircraft engagements must also be monitored by an ADA OC/T to provide feedback to the TAF for firing credit.**

6-4 Adjudication and BDA Assessment

1. **Ground to air and air to ground engagements by ADA and rotary wing aircraft are completely instrumented through the CT-OIS. However, adjudication of ground to air and air to ground engagements by ADA and Fixed Wing aircraft are not automated and thereby are not captured by the CT-OIS system. These engagements are assessed IAW guidelines listed below as well as in the adjudication chapter of the EXSOP.**

2. **Ground to Air. CAS and rotary wing aircraft without MILES become casualties based on the quality and/or quantity of fire directed at them relative to the aircraft tactics used. Some examples are: Volume, accuracy and distance of Air Defense fires, Volume, accuracy and distance of CAFAD (Combined Arms For Air Defense) fires, \Countermeasures employed by the aircraft; speed, maneuvering, and attack profile.**

3. **Warrior 16 / Eagle 7T / Raven 03 / Raven 07 will assess all engagements and coordinate on final adjudication.**

4. **Combined Arms for Air Defense (CAFAD) U.S. Army units' employment of CAFADs represents the unit using its organic assets as protection against air attack. CAFADs increase a unit's chances of survivability and may cause the pilot to abort the attack or disrupt pilot aim. Combined arms air defense measures may be employed throughout the battlefield. Engagements will follow the safety and ammunition restriction appropriate to type of weapon system. CAFAD engagements (5.56mm through 120mm) of rotary wing aircraft are adjudicated with MILES and recorded in the Tactical Analysis Facility (TAF). CAFAD engagements of fixed wing aircraft are adjudicated manually. Valid CAFADs Engagements will follow safety and ammunition restrictions appropriate to the type of weapon system. OC/Ts will adjudicate CAFAD effects using the following criteria (High and Low Probability of Hit):**

    a. **High Probability of Hit. High probability of hit occurs when a CO/TM fires are massed with correct lead angle and distant from the A/C (IAW FM 71-1).**

    b. **Low Probability of Hit. Low probability of hit occurs when a CO/TM whose fires are not massed and at a distance greater than max effective range of the weapon system.**

5. **Air to Ground. Valid air to ground engagements are adjudicated by Raven 07, in coordination with Warrior 16 and the 549 CTS GREEN FLAG-West supervisor. Adjudication is based upon the weapon employed, aircraft type, delivery parameters, and the relative effectiveness of the air strike, to include aircraft threat reactions and survivability. The Ravens will pass to Warrior 16 appropriate BDA for each strike and Warrior 16 will coordinate with OC/T teams to remove appropriate vehicles. Team 07s have final say in what vehicles are destroyed.**

Chapter 7
Operations Associated with Military Police

CHAPTER 7: Operations Associated with Military Police

7-1 Detainee Handling Process (After 24 Hours)

1. **Overview. Detainees on the division "Detain, Suspect, Protect" (DSP) list must be reported immediately and processed to Division MP's within 24 hours from the time of detention. Brigades and MSCs have the implied task of servicing the Division DSP list and are authorized their own internally refined DSP list. Brigade specific DSP lists will be forwarded to the 52ID G2 for review. Detainees on the Brigade DSP list will be reported to division as part of routine reports (SITREP, INTSUM, IIR, etc.) and transferred to Division within 24 hours. Exploitation of all detainees at the DCP by qualified HUMINT personnel, the brigade Tactical HUMINT Team (THT), will be conducted IAW FM 34-52 and all OC/T and Geneva Convention (FM 27-10) requirements discussed in paragraph 2-7 are in effect. A detainee is any person captured or otherwise detained by an armed force. (JP 3-63) Detainees may also include enemy combatants (EPWs and members of armed groups), RP, (retained personnel) and CIs (civilian internee). (See DODD 2310.01E.) Detainees do not include personnel being held for law enforcement purposes, except where the U.S. is the occupying power within the limits of the ROE. Detained persons may be interrogated or questioned. They are frequently excellent sources of information and immediate access and exploitation by qualified HUMINT personnel, the brigade Tactical HUMINT Team (THT), is critical. The US HUMINT collector must remember that, regardless of the legal position of the detainee, they must be treated in accordance with the Geneva Convention.**

2. **Physical Capture. When a BLUFOR Soldier intends to detain a role-player, that Soldier must inform a OC/T of the intent to detain and the planned method; provide the necessary force (number of Soldiers) required; and provide the necessary equipment (flex-cuffs, rope, zip-strips, etc.). Once the BLUFOR Soldier demonstrates the ability to detain, a OC/T will facilitate the detention by placing his hand on the shoulder of the detainee and stating, "You are now detained". The role-player will act as if he has been physically captured from that point forward. Once under the control of BLUFOR, role-players will not attempt to escape unless directed to do so by a OC/T. Exceptions: Under some circumstances, if a rotational unit expects to conduct an operation that requires a rapid detention (e.g. Time Sensitive Target); they may brief their assigned OC/Ts in advance on their planned method for capturing, securing, and searching detainees. Provided that the OC/T agrees, the unit may be granted an exception to the requirements specified above in regard to demonstrating the intent, method, and ability to detain individuals. In those cases, potential detainees will be instructed in advance to comply with BLUFOR methods for detention, but BLUFOR Soldiers will still be restricted from physically restraining individuals.**

3. **Simulation of binding, muffling, or blindfolding. Player units will at no time physically bind, muffle, or blindfold detainees; although they may simulate these measures by displaying the physical means to do so. Binding: Once a detainee has been physically secured, the capturing unit can simulate binding his hands with some appropriate method (hand-cuffs, flex-cuffs, zip-strips, rope, etc.) by placing the means of binding in the detainees hands. The detainee is required to maintain the bindings in his hands and to act as if his hands are physically bound until they are removed. If BLUFOR intends to bind a role-player's feet, also, they must demonstrate the ability to do so and simulate placing the bindings on the feet. Blindfolding or muffling a detainee is simulated by loosely tying a blindfold or gag around the detainees neck, or a similar device inside the role-player's shirt. If BLUFOR does simulate blindfolding or binding the feet of a role-player, the role-**

player is expected to act accordingly. BLUFOR must carefully help move the role-player as if he could not see or walk.

4. **Search. Detainees may be searched, but only in accordance with the instructions and restrictions specified in paragraph. 3-8**

5. **Treatment of Detainees. All detainees will be given the opportunity to secure an ACH/Kevlar, eye protection, inclement weather gear, water (at least one quart), and food prior to removal from the point of detention. Detainees will not be moved without OC/T or COEFOR/COB OC/T escort. All detainees will be treated humanely and IAW International Law and the Geneva Convention. Rotational units will at no time place a detainee under duress (intentional sleep deprivation, stress positions, verbal threats, etc.). Detainees mistreated by the rotational unit, to include failure to provide for basic needs and safety (food, water, shelter), will be assessed as non-battle casualties and be removed from the area.**

6. **Mistreatment. All potential violations of the Geneva Convention, International Law, or 52ID directives, or any detention conducted without appropriate justification, will be investigated under the provisions of AR 15-6.**

7. **Processing and Evacuation of Detainees. An individual is considered a detainee when restrained at the point of capture. A detainee will not be held by the rotational unit more than 24 hrs from the time of detention. Detainees may be processed according to the unit's SOP, and prepared for transfer to the Brigade Detainee Collection Point. Units will submit detainee reports to 52ID within one hour after detainee has been processed into the BDE holding area. Detainees on the division detain list must be reported immediately and processed to EAB or 52ID MPs as soon as time permits. OC/T Coverage on Detainees. There will be continuous OC/T coverage of detainee events, as directed by Operations Group. Detainees will be clearly identified as such by the OC/Ts or COEFOR controlling the event.**

8. **Paperwork. All detainees will be processed with the following paperwork: A Minimum of two copies of DA Form 2823 (Sworn Statement); these statements will be completed by Soldiers who participated in the detention, Apprehension Form, DA Form 4137 (Evidence Document), Additional Paperwork that will go with completed packets to the BCT's Detainee Review Board (DRB): Any sworn statements from the detainee, witnesses (local nationals), DD Form 2708, Medical Documentation, Any pictorial evidence collected by the capture unit, Any explosives residue tests conducted and DD Form 2745, Capture Tag.**

9. **Detainee Review Board. All BCTs are required to conduct a DRB for each detainee in-processed through their DCP/DHA-A. A DRB can review several detainee packets at a single board. The results of this board, with disposition determination, will be reported at 0800 daily during FOF. This report can be submitted in memorandum format or briefed via the CPOF BUA. If a memorandum is submitted it will be forwarded to the attention of the 52ID G3 and the PMO.**

10. **Extension. A written request to extend the 24 hr detention timeline can be submitted and will be considered for approval if a valid justification is provided.**

11. **Evidence Collection. Proper evidence collection as part of detainee operations is critical to successful prosecution of indigenous suspects associated with anti-US/Coalition activities, including terrorism, in local courts. Evidence collection should be performed as part of detainee operations (Raid, Cordon & Search) and should include a thorough search for evidence and photographs - on location and at time of detention - of the individual(s) with the evidence (contraband, illegal weapons, IED making materials, etc.). Evidence collection will be conducted IAW ROE / security agreement and applicable regulations. A minimum of one OC/T is required to cover down on the operation.**

12. **Photographs. Any and all evidence. Units should take photos of everything that could be used in the courtroom (ie. crime scene, weapons, shell casings, footprints, and tire tracks). Overall, 'Best Evidence Photos' involve: "Evidence at the Scene with the Detainee" (best) or "Evidence at the Scene".**

13. **Statements/Testimony. Ideally, each case should have two coalition forces witnesses – and any cooperative local nationals (with specific contact information). The "Five W's" - all witnesses should have first-hand knowledge of events: Who? - What? - When? - Where? - Why? Generally, sworn written statements are not sufficient for cases. Witnesses must testify – live at court or via VTC.**

14. **Diagram/Scene Sketch. This should be annotated – Indicating Key Pieces of Evidence/Events. The sketch should also include estimated distances - in meters - b/w key points of interest. Landmarks/Cities/Villages should be referenced as well. Sketches can be handwritten but preference is for Power Point or other graphic program. Google Earth / Unclassified Falcon View of the area.**

7-3 Military Working Dog Teams

1. **General. A military working dog team consists of one dog and on handler trained and certified as an entity. An Army MWD will normally be a military police, engineer, or special forces, qualified in his or her primary MOS.**

2. **Employment. Dogs can work in day or night. In hot climates, MWD teams train and work best at night. The ambient air temperature is normally lower, affording the dog better ability to maintain normal body temperature. Dogs are more capable of detecting movement in limited visibility conditions. The dark appears to increase their interest in their environment. In moderate climate, dogs can live in quarters and be transported in vehicles that are not air conditioned. Even so, current U.S. Central command policies require that MWDs be transported in air-conditioned vehicles. Like humans, they need time to acclimate to a new environment. Because he is extremely familiar with his own animal, the handler is the best judge of when the MWD has reached the limit of its effective performance.**

3. **Limitations. MWDS have the following limitations. They are not a stand-alone system for conducting search operations. They may activate devices while searching. Extreme weather conditions may reduce their performance. They may be reluctant to negotiate terrain or areas that are physically harmful, such as unstable rubble piles or broken glass. Excessive distracting elements such as trash, stray animals, or excrement within or close to the search area may reduce their performance. They are not trained to search people. They may become protective if handlers are seriously wounded or killed.**

4. **Capabilities By Type. MWDs come in several shapes, sizes and capabilities. Selecting the correct MWD for the mission is essential in order to maximize the utility of the MWD team. The supported tactical commander through consultation with the Kennel Master should select the MWD that best supports his mission. The following MWDs are generally available:**

    a. **Patrol Dogs (PD). Provide a psychological deterrent, are a force multiplier, and are a show of additional force. The dogs work primarily on-leash but can be worked off-leash, if needed. All MWDs with patrol in their name are trained to bite and hold, with or without command. They are trained to detect people, not narcotics or explosives. PD teams can perform many combat support operations. These teams enable the tactical commander to free up soldiers and employ their resources in other areas. This force multiplier is especially valuable in area security and force protection and antiterrorism operations. Patrol Dogs and Characteristics. PD teams can perform many combat support operations. These teams enable the tactical commander to free up soldiers and employ their resources in other areas. This force multiplier is especially valuable in area security and**

force protection and antiterrorism operations. Employment techniques during combat support operations. PD teams can perform many combat support operations. These teams enable the tactical commander to free up soldiers and employ their resources in other areas. This force multiplier is especially valuable in area security and force protection and antiterrorism operations.

b. Perimeter Security. PD teams are useful for perimeter and distant support posts because they are usually located away from normal activity and large numbers of people. These posts also usually enclose large areas, and it would take a large number of single sentries to secure the area effectively. The large size of these areas allows the PD team to change positions to take advantage of the prevailing wind direction. These posts may be secured only during periods of advanced security and high threat. Occasional random posting of these areas is recommended, especially during periods of limited visibility (rain, snow, dust, smoke, and fog) or night conditions. Barriers and obstacles (such as fences, buildings, gullies, and streams) must also be identified and considered in security post planning. Place the PD team so that these obstacles offer the least interference to security.

c. Combat Patrols. In defensive operations, combat patrols are used to provide early warning, to confirm intelligence information, and to detect or deter enemy action. PD teams greatly enhance the security of reconnaissance and combat patrols. On combat patrols, a PD works at maximum efficiency for only two or three hours. The team is most effective in uninhabited areas. If a PD frequently alerts on friendly forces and is continuously taken off his alert, he soon loses interest and reliability. Patrol leaders and members must be briefed on actions to take when a dog handler is seriously wounded or killed. Dogs that have worked closely with patrol members and have developed a tolerance for one or more of them will usually allow one of the patrol members to return it to the kennel area. However, the dog may refuse to allow anyone near his handler, and other handlers may need to be called to help. The canine must be separated from the handler by: Coaxing the dog away with friendly words or food. Covering the dog with a poncho to immobilize it. Staking out the dog or leashing him. A human will always take precedence over an animal. If no effort is effective, the dog may be destroyed. However, all efforts should be made to avoid this; an MWD is an expensive and valuable asset to replace. If a situation arises where a canine is injured but the handler is not, the handler must be allowed to accompany the canine. If wounded or killed, an MWD should be evacuated using the same assets and should receive the same consideration as that given to a Soldier under the same circumstances.

d. Tactical Patrols. PD teams can be used in tactical patrols to PD teams can be used in tactical patrols to detect enemy presence, to help the patrol avoid discovery, and to locate enemy outposts. When the PD alerts, the handler should signal the patrol to halt until the cause of the alert can be identified and the patrol can proceed safely. If a firefight develops while the PD team is at the point position, the PD team should respond to fire team's directions and act as a regular member of the patrol.

e. Patrol Narcotic Detector Dog (PNDD). PNDD or patrol drug detection dogs (MIKDs) are trained to recognize the scent of illegal substances and drugs through a program of practice and reward. The dog gives a response to trained odors and works on or off leash. The PNDD provides commanders with unique capabilities in combat support environments. The narcotic detection capabilities of these dogs can be used to maintain the order and discipline of US soldiers as well as combatants and other persons involved in operations (EPWs, CIs, refugees, or other detained/interred persons during time of war/conflict).

f. Patrol Explosive Detector Dogs (PEDD). PEDDs are useful in many searches or investigations involving explosives. This dog is used to detect explosives based on his response to the presence of trained odors. They work on or off the leash.

g. Mine Detection Dogs (MDD). MDDs are trained to perform military mine detection missions in a hostile environment. Their handlers are exclusively engineer Soldiers, and the MDDs work on short lead or long line. MDDs can find but not confirm land mines; unexploded explosive ordnance; and other buried, explosive hazards. When sufficient time is allowed, MDDs can perform area clearance, minefield extractions and route clearance.

h. Specialized Search Dogs (SSD). SSDs are used in all types of area searches. They are trained to detect explosives, weapons, and ammunitions. They work primarily off-leash. The handler, who may be a military police, engineer, or special forces Soldier, controls his SSD using a multitude of command methods. These signals may be electronic, visual, and audible only to the dog.

i. Combat Tracker Dog (CTD). CTDs are trained to track single or multiple quarries over varied terrain. These dogs work on foot and require a dedicated security team. Their general capabilities include locating enemy personnel from a know location, such as IED trigger points, sniper hide site, ambush site, or observation post. Because this dog tracks human scent, time is a factor because scent dissipates or becomes contaminated over time.

j. Tactical Explosive Detector Dog (TEDD) Army Temporary duty Soldier-handled explosive detection dog that can perform target odor searches in all tactical environments either on or off leash. Stand-off IED detection capability is from 25to 100 meters.

k. Assessment. Dogs and handlers will not be separated. If assessed as casualties the dog team will be replaced with another soldier and will remain uncompetitive until the team is reconstituted through normal EXOP.

5. Safety. To prevent accidental injury from working dogs, all personnel should keep a 5 meter buffer from the dog whenever possible. When working off leash they can become involved in fighting with feral dogs and other animals and can be endangered by heavy volume, high speed traffic. Although some types of MWD are not trained to bite and hold, these dogs still have inherent nature to bite. If they have teeth they bite.

6. COEFOR. COEFOR personnel who handle simulated explosives will have traces of ammonium nitrate on their persons for exploitation.

7-2 EPW Operations

1. Overview: Some EPWs may have tactical intelligence that can be gained through interrogation. Interrogation is the art of questioning and examining a source to obtain the maximum amount of usable information. The goal of any interrogation is to obtain needed information, which is timely, complete, clear, accurate, usable and reliable, in a lawful manner and in the least amount of time, which meets intelligence requirements of any echelon of command. EPWs will be processed at the Brigade Interrogation Facility (BIF) and interrogated in the presence of an OC/T IAW FM 34-52 and FM 2-22.2 by qualified Military Police (MP) or Military Intelligence (MI) interrogators only. All EPWs will be transferred to competent Host Nation authorities within 24 hours of time of capture. Requests for extension at the BIF will be forwarded to competent Host Nation authorities for approval. A OC/T or COEFOR/COB LNO must remain with the EPW throughout the process until he or she is released to Division, OC/T, and/or COEFOR/COB LNO control. The use of force, mental torture, threats, insults, or exposure to unpleasant and inhumane treatment of any kind is prohibited by law and is unauthorized by the US Government and the National Training Center.

a. EPW interrogation without OC/T. Any EPW interrogated without a OC/T present will be assessed as a non-battle casualty and evacuated thus causing BLUFOR to lose any potential intelligence.

b. COBs. COBs attempting to turn in weapons or provide intelligence to the unit can be held for interrogation but should immediately be reported to the 52ID DTOC. A OC/T will monitor the status of the individual for accountability.

Chapter 8
Sustainment

CHAPTER 8 - SUSTAINMENT:

1. **Overview. The NTC battlefield provides brigades challenging and realistic training on all aspects of logistics operations. Time constraints and reporting procedures regarding personnel and vehicle reconstitution are closely monitored in order to replicate actual combat. This chapter discusses NTC rotational sustainment operations procedures.**

8-1 Personnel

1. **Strength Accountability. Each unit will provide a battle roster to their OC/T counterpart on RSOI 1 before deployment from the LSA Warrior. Each TF will also provide a daily strength report showing personnel strength figures of their subordinate units to their OC/T. The breakdown for the Unit Strength will be by officers, warrant officers and enlisted Soldiers, with totals. In addition rotating units will provide a 100% accountability report to the 52ID DTOC every morning at 0600. This is especially important during live fire exercises. Failure to submit a report in a timely manner may delay the units training.**

2. **Casualty Assessment. When an individual soldier's IWS/MIKIWSMIK sounds continuously, the individual is considered to be a casualty. If a vehicle's CVKI or WITS light flashes continuously, the occupants of that vehicle are considered to be casualties. If a non-MILES'd vehicle is assessed by an OC/T (artillery, CAS, safety, etc.) or when the MILES of any person on board a non-MILES'd vehicle goes off due to enemy contact, all personnel on board are assessed as MILES casualties. Casualties will immediately stop the vehicle. The OC/T on site will issue the soldiers MILES cards based on the type of weapon system that caused the injury. Soldiers will then follow the directions printed on the MILES cards and begin evacuation.**

3. **Aircrews. Aircrews will comply with instructions on their MILES casualty cards and follow unit downed aircraft recovery procedures. If a unit aircraft arrives to extract the downed aircrew, the downed aircrew will not leave with the extracting aircraft. A minimum of one soldier will remain with the aircraft until recovery is complete. Each guard will have 2 quarts of water, three 12-hour chem-lights of any color and at least one MRE. Individual Soldiers are never left as casualties on the battlefield. The unit will make every attempt to evacuate casualties on the battlefield. Casualties will not be abandoned on the battlefield. Soldiers are authorized to move to safer ground if there is a danger posed by vehicular movement. At no time will all Soldiers in a group of casualties go to sleep. At a minimum, one Soldier will stand guard by being fully awake, standing, and having in his possession a way of signaling armored vehicles in day or night.**

4. **Vehicles. Vehicles assessed penalty kills will have their crews (TC, driver, and gunner) assessed as MILES casualties. The dismounted portion of infantry/ engineer squads and other vehicle occupants will be allowed to continue the battle if their IWS/MIK were not activated.**

    a. **Medical vehicles and personnel that have been assessed as casualties will continue to monitor radio traffic in case there is a real world emergency so they may move freely to the scene to render assistance.**

5. **Various types of UXO are present on the NTC battlefield. The EOD OC/T may assess Soldiers as casualties or equipment as damaged or destroyed based on the UXO encountered. The OC/T will take into account the size and HE weight of the UXO, type by function, and fusing before assessing casualties or damage. Some UXO may detonate if approached too closely while others require actual contact. Soldiers and equipment in the area may also be affected depending on the fragmentation and blast radius of the UXO encountered.**

6. **COEFOR personnel will be issued casualty cards for both STX and FoF. The COEFOR chain of command will ensure there is a mix of KIA and WIA cards issued to their Soldiers. A minimum of 25% of the COEFOR Soldiers will have WIA casualty cards. MILES cards will be issued to COEFOR personnel by Pale Horse OC/Ts based on the situation and applicable injuries.**

7. **Letters of sympathy and request for awards will be generated as per SOP and forwarded to the unit's appropriate higher headquarters after review by the unit's OC/T. Letters of sympathy and request for awards (CIB, CAB, PH, etc) will be clearly marked For Training Only.**

8. **Nothing in this EXOP prevents a Brigade/Regiment Commander from initiating an investigation for any other non-training purposes.**

8-2 MILES Casualty Cards

1. **Issue. OC/T teams issue only those MILES casualty cards with combat type injuries, rather than disease, non-battle injuries. Cards are issued during RSOI, and are inspectable items throughout the rotation. Issued cards will be kept in the Soldier's left shoulder sleeve pocket. Team 07s are the only authorized OC/T to modify the severity of evacuation categories (upgrade to KIA or downgrade) in order to meet training objectives. Key leaders and Drivers/TCs of mission critical vehicles (Tank, Bradley, ACE, Fueler) will be issued Return to Duty ("RTD") cards. A minimum of 25% of COEFOR/COB Soldiers possess WIA casualty cards.**

2. **Maintenance. In order to properly adjudicate casualty evacuation on the battlefield, every BLUFOR and COEFOR/COB Soldier maintains their MILES card throughout the evacuation process. OC/Ts inform units of this requirement. Additionally, at each point of evacuation, the OC/T on the ground initials the card with call sign and the time the Soldier processed through that echelon. Critical documentation time hacks are Point of Injury (POI), arrival at Role I care, and arrival at Role II care. Prior to the start of Force on Force, OC/Ts will reissue the same type of MILES card that was issued during RSOI to any Soldier whose card was expended during STX. If a Soldier's card is lost or misplaced during transport as a casualty, OC/Ts will reissue a new card of the same type and the Soldier will continue to move through the MEDEVAC/CASEVAC system; lost/misplaced cards will not result in an automatic Died of Wounds (DOW).**

3. **Types. Only "NTC MILES Casualty Cards" will be issued and utilized. GTA series MILES cards will no longer be used at the NTC. The three types of casualty cards are:**

    a. **Wounded in Action (WIA). WIA cards specify the type of wound, evacuation category, and status as ambulatory or litter. OC/Ts have an additional task of indicating, based on the tactical scenario, whether the injury is blast-related or ballistic, as well as whether the casualty also requires a MACE or CBRN treatment. The RTU is responsible for rendering treatment appropriate to the wound description, and meeting the evacuation time standards outlined in EXSOP chapter 8-4. OC/Ts will utilize the back of the MILES card to**

indicate battle period, time of injury and treatment at each echelon of care, and if/where the casualty was RTD or DOW.NOTE: Casualties that are RTD forward of Role I care are still reported. They are reported as "Routine" to Warrior TOC, and their unit will process their DA 1156 according to unit SOP.

b. Killed In Action (KIA). KIA cards will be issued by OC/Ts based on Team 07 guidance for a battle period. This card will only be issued at time of incident. The unit is responsible for transporting casualties with MILES KIA cards to the Brigade MACP. At no time will these casualties be transported to Role 2 or with Soldiers WIA. Once at the Brigade MACP, DOW & KIA Soldiers will remain there and will not be released until all required paperwork IAW paragraph 8-5 is completed based on type of reconstitution. NOTE: The only personnel authorized to pronounce death are credentialed medical providers (MD/DO, not PAs) unless the casualty has been decapitated, the remains have begun to decompose, or rigormortus has set in.

4. **ROE/Safety Violation. Units will process casualties that have been issued penalty casualty cards as indicated on the card, the same as they would a standard MILES casualty card.**

5. **Mild Traumatic Brain Injury (mTBI). Also commonly known as concussion, is a prevalent injury among deployed Soldiers due to wide spread enemy use of a variety of improvised explosive devices. The immediate physiological effects of concussion vary but have proven to be cumulative from repeated blast and impact exposure. These effects can and must be managed for the well-being of the Soldier and the continued effectiveness of the force. IOT train units on the proper identification, treatment and documentation of these injuries, NTC will simulate these casualties during all phases of training. The following parameters apply.**

6. **Adjudication: The following events will require screening for mTBI utilizing the Military Acute Concussive Examination (MACE): Any service member in a vehicle associated with a blast event, collision, or rollover. Any service member within 50 meters of a blast (inside or outside), direct blow to the head or witnessed loss of consciousness, Command-directed, especially in a case with exposure to multiple blast events.**

7. **Treatment: Any Soldier requiring a MACE based on the mandatory events listed above will be seen as soon as tactically possible (in accordance with TC3 principles) by medical personnel who will utilize the MACE to determine altered mental status. Any Soldier who requires a MACE will be placed on a 6 hour recovery period from the time of the exam during FoF.**

8. **RTU Reporting: IAW ALARACT 193/2010 units will report the following for all concussive events in paragraph A above: DTG of event, Type of mandatory event, SIGACT number (if applicable), Personal identifier (social or battle roster number), Unit, Service member's distance from blast and Disposition of any mandated medical evaluation**

9. **OC/T Reporting: Teams will report daily status consisting of the following to Warrior TOC: number of mandatory events, number of Soldiers requiring exams, number of MACE conducted, number of MACE conducted to standard**

8-3 Medical Treatment

1. **Echelon I (Rolel I) Medical Care. The first level of medical care a Soldier receives is provided at this echelon. It includes the following:**

a. Self-aid/Buddy aid. This treatment enables the Soldier or buddy to apply immediate care to alleviate an injury or life-threatening condition. These procedures include aid for chemical casualties.

b. Combat Lifesaver (CLS). The combat lifesaver provides enhanced first aid for injuries based on his/her training before the combat medic arrives. First Responders are a local unit training program and not recognized by TRADOC or AMEDD, and therefore are not counted as Combat Lifesavers.

c. Medical Personnel: Combat Medic. The combat medic provides treatment and applies clinical protocol based on medical MOS specific training. The combat medic is trained to emergency medical (EMT) level.

d. Medical Personnel: Treatment team. The treatment team is the definitive care for Role I. It consists of a physician or a physician's assistant, a minimum of three appropriate combat medics (68Ws) and the appropriate medical sets, kits, and outfits organic to a treatment squad. (a minimum of one x Trauma MES and one x Sick call MES or 1 x Tactical combat medical care MES). These personnel are trained and equipped to provide advanced trauma management (ATM) to the battlefield casualty. All MILES casualty precedence categories, with exception of routine, must be evaluated by a treatment team and DD Form 1380 completed as required. The DTG annotated on DA Form 7656 (TC3 card) or DD Form 1380 is considered the definitive care time. Like-elements provide this echelon of care at ambulance exchange points augmented with treatment teams, chemical casualty decon sites, and brigade support medical companies (BSMC) or area support medical companies (ASMC).

2. Echelon II (Role II) Medical Care. This echelon of medical support duplicates Role I and expands services available by Echelon II (Role II) Medical Care. This echelon of medical support duplicates Role I and expands services available by adding x-ray, laboratory, dental, and patient holding capabilities and may include physical therapy and behavioral health assets. At the NTC in order for a MTF to be considered at Role II facility it must have operational x-ray, lab, dental and patient hold capabilities. The Role II medical treatment facility will typically be the 'end' destination of all MILES casualties here at the NTC unless an Echelon III MTF is established for a rotation. Once casualties receive proper treatment from the Role II MTF and evacuation assets have been allocated for movement to LSA Warrior, they will be processed back into the brigade by the BCT S-1 section, or sent to the MACP, whichever is applicable. The brigade through the BCT S1 is directly responsible for establishing a holding area for those casualties pending

a. Class VIII (Medical Resupply). Rotational units should request/issue Class VIII medical supplies throughout the rotation, similar to real-world operations.

b. Administration of IVs. The RTU is authorized to give IVs only to Soldiers organic, assigned, or attached to their BCT. The RTU is not authorized to administer IVs to anyone outside of their unit, to include coalition partners and role players.

c. RUBA (LSA Warrior) Medical Support Requirements. The following medical support requirements are required during each rotation at the rotational unit bivouac area, provided by FORSCOM tasking as coordinated by the RTU. Refer to FORSCOM Regulation 350-50-1.

1 x Physician (62B or equivalent)
2 x Physician's Assistant (65D)
1 x Medical NCOIC (68W3/4)
1 x Medical Liaison (68W3)
1 x Medical Liaison Assistant (68W1)
1 x Treatment Squad (1x 68W3, 1, 68W2, 3x 68W1)
1x MES TCMC (NSN 6545015653507, LIN M30499, UAC 269A)
1x Evacuation Squad (1x 68W2, 3x 68W1)
2 x wheeled ambulance (M997 FLA or M1133 Stryker MEV)
1x TMP vehicle

2x MES GA (1x per platform) (NSN 6545015684916, LIN M26413, UAC 256B)
1x Digital AN/TYQ-108 [MC4 Laptop, Printer, Network]

d. The liaison team will track all RTU patients and provide daily updates to the WACH Commander and BCT Surgeon on admissions and dispositions for RTU Soldiers receiving medical care, external to the BCT medical assets in the Box.

e. The treatment squad facilitates medical treatment and screening for priority and routine patients prior tobeing seen at Weed Army Community Hospital in order to ease the facility's patient workload. Routine medical care will include what is medically necessary and unavailable from organic BCT Role 2. Medical emergencies will be evacuated directly to WACH Emergency Department. The evacuation team provides patient transport to WACH and outlying medical facilities as necessary.

8-4 Casualty Evacuation

1. Time Requirements. Time required for evacuation begins at the time the casualty is assessed. When casualties are evacuated to the medical treatment facility, they must bring as a minimum, their LBE, ACH, protective mask, JSLIST gear, MILES, MRE and sleeping bag. All sensitive items remain with the parent unit.

2. MEDEVAC Platforms. For medical evacuation (MEDEVAC) ground/air ambulance platforms (M997s, M113s,M1133s, HAGA, orUH/HH-60), casualties are loaded and secured IAW FM 4-02.2. Special care is required to ensure correct loading in regard to patient precedence and utilization of proper equipment.

MEDEVAC Platform	Maximum Litter	Maximum Ambulatory	Mixed Category
M996 Wheeled Ambulance	2	6	1 litter + 3 ambulatory
MaxxPro Ambulance MRAP	2	3	
RG33 MRAP HAGA	3	6	1 litter + 3 ambulatory
Caiman MTV Ambulance	4	6	2 litter + 3 ambulatory
M1133 Stryker Ambulance	4	6	
M997 Wheeled Ambulance	4	8	2 litter + 4 ambulatory
M113 Tracked Ambulance	4	10	
UH/HH-60 w/ hoist	3	4	4 litter + 1 ambulatory
UH/HH-60 w/o hoist	6	7	4 litter + 1 ambulatory

3. CASEVAC Platforms. For non-medical military vehicles or casualty evacuation (CASEVAC) vehicles or aircraft, casualties are loaded and secured using the correct casualty precedence and equipment (IAW FM 4-02.2). Once loaded and secured, the casualties will arise from the litters and ride seated on the non-standard vehicle, utilizing vehicles seats and benches, proper eye protection, and ACH. Units will not exceed the casualty carrying capacity of the evacuation vehicle. The chart below outlines capacities for commonly used military vehicles:

CASEVAC Platform	Maximum Litter	Maximum Ambulatory	Mixed Category
M998 (4-person)	3	4	
M998 (2-person)	5	0	
M1081 LMTV	7	12	
Trk Cgo 2.5 or 5 Ton	12	16	
HEMTT Cargo	16		
UH-60 Black Hawk	3	10	1 litter + 6 ambulatory

CASEVAC Platform	Maximum Litter	Maximum Ambulatory	Mixed Category
CH-47 Chinook	**24**	**31**	**4 litter + 25 ambulatory 8 litter + 19 ambulatory 12 litter + 16 ambulatory 16 litter + 10 ambulatory 20 litter + 4 ambulatory**
C-130 Hercules	**70**	**85**	

4. **Litters, litter straps, and all equipment required to properly transport the casualty must accompany casualties throughout evacuation.**

5. **Air Evacuation. Casualties may be evacuated via medical aviation assets, either medical or non-medical aviation assets. All required equipment, to include litters and litter straps, will be used to properly transport the casualties. All aviation assets so employed must have MILES and are subject to all battlefield effects encountered. The evacuation time requirements remain the same whether casualties are transported via ground or air assets.**

6. **Air MEDEVAC. Air MEDEVAC assets are dedicated aircraft with medical evacuation kits installed capable of providing enroute medical care. Litter casualties transported on MEDEVAC aircraft will be loaded on to the litter pans of the carousel and properly secured, IAW FM 4-02.2, prior to the aircraft taking-off.**

7. **Air CASEVAC. Air CASEVAC assets include any non-medical aircraft that is used to transport casualties. Units must prepare the CASEVAC aircraft under the supervision of a qualified OC/T (Eagle Team). To prepare a CASEVAC UH-60, the aircraft is configured to allow floor loading. Sufficient tie down straps must be present for each litter to be loaded. To prepare the CH-47, the litter support kit must be available and one section accommodating 4 litters must be properly installed.**

Table 7-4
CH 47 Casualty Transportation Limits
(With Litter Support Kit)

Ambulatory	Litter
31	0
25	4
19	8
16	12
10	16
4	20
1	24

Table 7-5
UH 60 Casualty Transportation Limitation

Ambulatory	Litter
10	0
6	1
0	3

   a. **Air CASEVAC Load/Unload Procedures. The first patient is properly secured to the litter, loaded aboard the aircraft, and properly secured to the aircraft floor. Once an OC/T verifies proper completion of procedures, the Soldier is released and seated in a troop seat. Remaining casualties are carried on litters to the cabin door inside of the rotor system for a UH-60 or to the ramp of the CH-47 under the crew chief's direction. These casualties occupy troop seats and comply with all loading instructions from the aircrew. During unloading procedures, the casualties exit the aircraft and remain within the rotor system abeam of the cabin door with the UH-60 (and at the ramp for the CH-47). At this location, litter patients are properly configured on a litter prior to movement away from the aircraft.**

All litters and all equipment required to properly transport the casualty will accompany casualties through the evacuation.

b. Casualty Evacuation Effectiveness. Casualties are declared either killed-in-action (KIA) or died-of-wounds (DOW) IAW with the criteria below:

i. KIA. A KIA (killed in action) is a Soldier who is assessed as a casualty and is issued a MILES casualty card indicating "KIA as approved/directed by Critter Team 07's. OC/Ts will issue a separate KIA casualty card based on their 07 guidance.

ii. DOW. A Soldier is Died of Wounds (DOW) if he/she is assessed as a casualty, is carrying a card indicating a Casualty Precedence Level (Urgent, Priority, or Routine), and one or more of the following is true: Does not receive the appropriate treatment at any level of care, is not evacuated to the appropriate level of care in the required amount of time or is not properly evacuated or transported during evacuation. NOTE: Only OC/Ts assess patients as DOW, not rotational unit Soldiers.

iii. All KIAs and DOWs must be evacuated back to the BDE MACP established within the BSA. Reconstitution occurs once all conditions are met IAW Paragraph 8-5.

c. Casualty Precedence. All casualty evacuation times are based on precedence. The time allowed for evacuation starts at the point of injury and depends on the type of initial care provided. Times are not cumulative. An urgent casualty that receives combat medic, combat lifesaver, and buddy aid at point of injury still has only two hours for evacuation to Role I care.

EVACUATION TO ROLE 1 (BAS) Time Limits			
If treated by	Patient Precedence		
	URGENT	PRIORITY	ROUTINE
Combat Medic	1 hr	2 hr	12 hr
Combat Lifesaver	45 min	90 min	8 hr
Self/Buddy Aid	30 min	60 min	6 hr
No Treatment	15 min	30 min	3 hr
EVACATION TO ROLE 2 (BSMC) Time Limits			
If treated by	Patient Precedence		
	URGENT	PRIORITY	ROUTINE
Role 1 BAS	2 hr	4 hr	24 hr

Patient Categories	TIME LIMITS POI to Role I	TIME LIMITS Role I to Role II
URGENT	1 hr	2 hr

PRIORITY	**4 hr**	**4 hr**
ROUTINE	**12 hr**	**12 hr**

8. Evacuation to Role I Treatment team (BAS):

a. Urgent: If treated by a combat medic at the point of injury the casualty has 1 hour for evacuation before being further assessed as DOW. If treated by a combat lifesaver, the casualty has 1 hour for evacuation before being further assessed as DOW. If treated by self/buddy aid, the casualty has 30 minutes for evacuation before being further assessed as DOW. If not treated, the casualty has 15 minutes before being further assessed as DOW. Priority: If treated by a combat medic at the point of injury the casualty has 4 hours for evacuation before being further assessed as DOW. If treated by a combat lifesaver, the casualty has 3 hours for evacuation before being further assessed as DOW. If treated by self/buddy aid, the casualty has 2 hours for evacuation before being further assessed as DOW. If not treated, the casualty has 1 hour before being further assessed as DOW.

b. Routine: If treated by a combat medic at the point of injury the casualty has 12 hours for evacuation before being further assessed as DOW. If treated by a combat lifesaver, the casualty has 8 hours for evacuation before being further assessed as DOW. If treated by self/buddy aid, the casualty has 6 hours for evacuation before being further assessed as DOW. If not treated, the casualty has 3 hours before being further assessed as DOW.

c. After proper evacuation from Role I Treatment team (BAS) to Role II (Brigade Support Medical Company): Urgent: After proper treatment by a Role I treatment team, the casualty has an additional 1 hour for evacuation to Role II care before being further assessed as DOW. Priority: After proper treatment by a Role I treatment team, the casualty has an additional 4 hours for evacuation to Role II care before being further assessed as DOW. Forms. Unit medics fill out DD Form 1380, Field Medical Card for each casualty, at each echelon of care, IAW FM 4-02.2, Medical Evacuation. Replacement Ops. Unless informed otherwise, rotational units execute individual replacement operations, evacuating all casualties to a Role II medical treatment facility, e.g., the BSMC.

d. Combat Lifesaver Operations. During RSOI Companies must provide their OC/Ts with a list of current combat lifesavers prior to departing from LSA Warrior. OC/Ts inspect the combat lifesaver bags to ensure contents are current and to-standard. The current combat lifesaver bag inventory is located on http://www.usamma.army.mil

e. Resupply. Combat lifesavers must receive Class VIII resupply through normal channels. Class VIII is utilized to treat all casualties. There is no simulation of treatment, except when a procedure could put a Soldier in danger.

f. Post Evacuation. After being evacuated through medical channels and receiving proper care at the Role II MTF, surviving casualties are sent to the BCT S1 section for in-processing back into the BCT. All DOW or KIA casualties must process through the MACP.

g. Class VIII (Medical Resupply). Rotational units should request/issue Class VIII medical supplies throughout the rotation identically to real-world operations.

h. Administration of IVs. Rotational units are unauthorized to administer IVs to anyone outside their unit, to include coalition partners and role players. The rotational BCT is only authorized to give IVs to Soldiers who are part of their Brigade Combat Team.

9. Casualty Reporting Standards. Casualty Report Preparation. Initial casualty reports will be prepard and forwarded to the 52ID-G1 for each individual casualty. Do not batch casualty reports by incident or battle period. BCT S1 will prepare casualty reports using the Defense Casualty Information Processing System (DCIPS). DCIPS reports must be completed on all US forces, attached Coalition Forces and US Civilian casualties that occur in the BCT's area of operations.

10. Casualty Report Routing. DCIPS or the Casualty Feeder Card (DA Form 1156) will be routed from the BN S1 to the BCT S1. The BCT S1 will forward the initial casualty report via an exported DCIPS report into Outlook to the 52ID G1. The BCT S1 is responsible for verification of data accuracy of the initial casualty report, adds any information not available at unit level, and forwards the completed casualty report to 52ID G1. As requested by 52ID G1 units must provide additional documentation IAW BDE SOP process to include a copy of the DCIPS or DA Form 1156, ERB/ORB, awards (DA Form 638, Request for CAB/CIB/CMB and Purple Heart), letters of condolence/sympathy. Each BN S1 will be required to submit 2 completed casualty packets to the BCT S1 containing the aforementioned items NLT 48 hours post suspension of battle field effects for that battle period time.

8-5 Reconstitution.

1. Personnel Reconstitution. Reconstitution is intended to allow units to train on accountability procedures and casualty/personnel operations. As Soldiers are lost as a result of combat action, the unit is required complete the actions as shown in chart below. In order to model this loss of time and ensure requirements are met., Soldiers will be out of play until the unit has completed the appropriate paperwork and forward it to the BCTS1 The decision for what type of reconstitution will be made by the 52ID Headquarters and disseminated to the unit's. Unless otherwise directed by 52ID, ALL Battle Periods will start with INDIVIDUAL RECONSTITUTION. Continue Mission Instructions for each battle period will future define details for reconstituion.

2. Reconstitution Point. Each Brigade Combat Team is required to establish a Reconstitution Point (Personnel Holding Area). The Reconstitution Point will consist of all applicable life support requirements. This will include, at a minimum, two general purpose (medium) tents or equivalent, climate control (air conditioning/heat as appropriate, water trailer with ice, latrines, Class I (ration cycle as per BCT), and cots. The BCT will man the reconstitution point 24 hours a day in order to maintain accountability of Soldiers awaiting reconstitution and coordinate for the return of these Soldiers to their unit. The reconstitution point NCO logs Soldiers into the reconstitution point (with minimum information including name, rank, SSN, unit, date/time of arrival), maintains 100% accountability for Soldiers in the reconstitution point, and then shares the information with a Bronco Sustainment or Goldminer Team member. In order to maintain positive control, Soldiers will be ordered that their place of duty is within the boundaries of the reconstitution point. The supervising Bronco Team member will issue the reconstitution time once the BCT S1 has received the required paperwork.

3. Types of Reconstitution. There are several types of reconstitution that can occur at NTC

a. Individual Reconstitution. Individual Reconstitution is the standard reconstitution procedure at the National Training Center unless otherwise directed by Headquarters, 52ID. A DA Form 1156, Casualty Feeder Report will be completed on all casualties, including RTDs. The unit S1/4 will collect the DA Form 1156 and process IAW their SOP. Units will submit all completed DA Form 1156s to their higher headquarters. All DOW/KIA will be processed through the Brigade S-1/4 (ALOC) after being released from the Mortuary Affairs Collection Point in order to return to the unit. NOTE: A DD Form 1380, Field Medical Card will be completed on all casualties requiring evacuation (except RTDs and KIAs). DD

Form 1380 will remain attached to the casualty until evacuation /medical treatment play ends and will then be processed IAW unit SOP. For casualties not declared DOWs or KIAs, after verifying that medical treatment has been rendered, the Soldier will be sent to the reconstitution point to await rekey and transportation back to their unit. If the Soldier had an "RTD" or "Walking Wounded" card, they will be immediately reconstituted at the BN/TF level from their Aid Station. DOWs & KIAs. Once an OC/T has verified that a casualty is DOW, he will annotate this on the casualty's MILES card. The unit is responsible for transporting all DOW & KIA Soldiers to the Brigade MACP. Once at the Brigade MACP, DOW & KIA Soldiers will remain there and will not be released until all required paperwork (DA Form 1156, letters of condolence/sympathy, 4187 (CIB, CAB, Purple Heart), personnel requests) have been processed through the Brigade S1. After a Bronco Sustainment Trainer has verified that the unit has submitted the proper paperwork, the Bronco Sustainment Trainer will grant the reconstitution of the Soldier. It is a unit responsibility to transport the Soldier back to the unit. Non-US Military Deaths. The BCT must transport the remains of any non-US Military personnel killed (DOW or KIA) due to US action to the Brigade MACP. Once the MACP Trainer has verified that the proper paperwork is done, those non-US Military personnel will be released.

b. Individual Modified Reconstitution. Units will be notified when Individual Modified Reconstitution is in effect. This method of reconstitution is executed in the same manner as individual reconstitution. The exception being that upon completion of appropriate treatment by Level I care, Soldiers will be immediately resurrected and returned through the personnel system (CTCP or BCT personnel section) for combat. Transportation from AXP/BCT personnel section back to their unit is the parent unit responsibility.

c. Battle Period Reconstitution. Battle period reconstitution is in effect when the Brigade's Main Body crosses LD. BP reconstitution is that when the Soldier is considered to be DOW or KIA that Soldier will not be re-keyed/resurrected any earlier than "continue the mission". For this, the unit will lose the soldier for the duration of the battle period and will not be reconstituted unless otherwise directed by DTOC. These Soldiers must be requested and processed in the same manner as outlined in individual reconstitution. These Soldiers will be sent to the Mortuary Affairs Collection Point (MACP) located at the BSA by the unit. Transportation of Soldiers from the Mortuary Affairs Collection Point back to their unit is the parent unit responsibility.

d. UNIT/TF Reconstitution. Based on the tactical situation the senior OC/T (COG for TF and larger units) may designate that a unit, or a portion thereof, be reconstituted based on reporting and requests with no evacuation of casualties. Unit reconstitution procedures involve the processing of all requests for replacements. Casualties remain with their unit, and are re-keyed resurrected by the unit OC/T upon completion of proper request procedures. Unit reconstitution procedures are as follows: The S-1 or representative will be provided by a surviving unit member a complete unit battle roster identifying the status of each individual from the unit (i.e., PFD, WIA, KIA, and MIA for those individuals of whom the status is unknown). An appropriate DA Form 1156, casualty feeder card will be attached to the roster. If there are no survivors, the S-1 section will complete these actions. After verifying the DA Form 1156 and the status of all unit members is verified, the S-1 or representative will forward these forms to the OC/T conducting reconstitution. The unit will complete all specific requirements identified by the senior OC/T (i.e., new equipment PMCS receipt, inventories, personnel in-processing, in-briefs, etc.). Based upon completion of these requirements the senior OC/T will determine the unit reconstitution time.

e. Immediate Reconstitution. All personnel will be immediately re-keyed. The unit will begin consolidating forces as required in preparation for its follow-on mission. No reports to OC/Ts are required.

4. **Unit Coordinating Instructions. All Soldiers evacuated back to the BSA/Mortuary Affairs Collection Point/Level II Medical Treatment Facility (MTF) will have appropriate cold weather gear, JSLIST gear, protective mask, sleeping bag, personal hygiene items, and at least 2 MREs. The unit will have to coordinate for the Soldiers that were evacuated to Level II MTF as part of a CASEVAC operation.**

5. **Award Requirement. The unit is responsible for preparing and submitting, as a minimum, to the supervising Bronco OC/T a DA 1156, DA Form 4187 requesting a Purple Heart and/or CIB/CAB, for the Soldier, Letter of Condolence (for KIA & DOW), and posthumous awards in order for the Soldier to be reconstituted.**

6. **Vehicle Reconstitution.Reconstitution is intended to allow units to more closely manage their resources in FOF. As vehicles and equipment are lost through damage or destruction, vehicles and equipment are not immediately and instantly replaced. Vehicles, and in most cases equipment, often need to be brought in from out of theater before they are readily available for use on the battlefield. Periodically, as directed in the 52ID OPORD, selected equipment may not be immediately available. Such equipment, if destroyed, may be unavailable for up to 24 hours. In order to model this loss of time, vehicles and equipment will be out of play for a minimum period of time, based on the training requirements, before they are reconstituted and can be used by the unit.**

7. **Types Of Reconstitution. There are several types of reconstitution that can occur for damaged/destroyed vehicles and equipment.**

    a. **Individual Reconstitution (Destroyed and Penalty). Catastrophic/Destroyed equipment as identified by OC/T RED card. The owning unit reports to maintenance submitting damage statement requesting (Estimated Cost of Damage) ECOD to determine if equipment is repairable and cost. Vehicle may be repairable but is not cost effective to repair as determined by MEL.**

    b. **Maintenance generates: DA form 2407 (manual) or (electronic) Work Order, DA form 2404 maintenance inspection worksheet, DA form 461-5 vehicle classification (for mobile ground equipment), DA form 3590 request for disposition (for power generation equipment), DD form 1577(red) condemnedNote: copies are kept by the Shop Office and provided to owning unit, BN S4 confirms all documents and notifies BDE S4 of loss and request for replacement and owning unit supply provides packet to (Property Book Office) PBO along with request for replacement. In order to prevent reconstitution and immediate destruction when a vehicle is reconstituted where it was originally destroyed in the battle area, all catastrophic vehicles are required to move under their own power back to the UMCP either during a lull in the battle or at the end of the battle period during the last hour of SOBE (as to not prevent crews from attending hot-washes and AARs) prior to their reconstitution becoming effective. The UMCP is the single point at which all catastrophic vehicles are reconstituted. This also prevents misinterpretation by the unit regarding recovery operations required for catastrophic vehicles. A catastrophic vehicle represents a "burning hulk" that is unsalvageable and/or too great a cost to recover or repair. It should not have recovery assets deployed in support of it. If a unit desires to execute a catastrophic recovery using high lift assets and a low boy or HET, the team 07 is the approving authority for that training objective and risk associated with the operation. Once all paperwork is verified and correct, equipment is reconstituted.**

    c. **Damaged equipment as identified by OC/T Green card: Owning unit reports to maintenance submitting damage statement with Letter of Release memo for repair signed by investigating officer or Bn Cdr if investigation is conducted, also a DA form 5988 or 2404 requesting repair.**

d. Maintenance generates: DA form 2407 (manual) or (electronic) Work Order, DA form 2404 maintenance inspection worksheet, DA form 461-5 vehicle classification (for mobile ground equipment), Maintenance shop must show necessary mechanic, tools, parts and POL to complete job and once all paperwork, mechanics, tools, parts and POL is verified and correct, equipment is reconstituted.

Time damage occurred	
recovered to MCP	
UNIT GENERATED	
Start PMCS Process/ECOD	Upon arrival +2hrs
DA Form 2404	2hrs
DA Form 2407 work order	1hr
DA Form 461-5 vehicle classification(mobile ground equipment)	1hr
DA Form 3590 request for disposition (power generation equipment)	1hr
DD Form 1577 (red) condemned	30min
DA Form 1348-1a issue release document(unit supply)	30min
BN S4 GENERATED	
QA/QC paper work	1hr
DA Form 2765-1 or DA Form 3161	1hr
Once all paper work is completed and approved it is turned in to the BDE S4 and PBO	

e. Individual Modified Reconstitution. Units will be notified when Individual Modified Reconstitution is in effect. This method of reconstitution is executed in the same manner as individual reconstitution. The exception being that Soldiers will be immediately resurrected and returned through the personnel system for combat. ALL required paper work still required. For vehicle/equipment reconstitution Rekey occurs at ROBE upon completion of equip EVAC to MCP and reports submitted to TF S4 verified by TF OC/T. No requirement for reporting to BDE or DIV.

f. Battle Period Reconstitution. Battle period reconstitution is in effect when the Brigade's Main Body crosses LD. For this, the unit will lose the vehicle and/or equipment for the duration of the battle period and will not be reconstituted until Continue the Mission Instructions are given by DTOC. The vehicle/equipment will be sent to the Unit Maintenance Collection Point (UMCP) located in the TF AO under self-recovery. Accountability of vehicles and equipment from the point of destruction back to their UMCP is the parent unit responsibility. OC/Ts will either escort or "pitch and catch".

g. UNIT/TF Reconstitution. Based on the tactical situation the senior OC/T (COG for TF and larger units) may designate that a unit, or a portion thereof, be reconstituted based on reporting and requests with no evacuation of vehicles or equipment. Unit reconstitution procedures involve the processing of all requests for replacements. Vehicles and equipment remain with their unit, and are re-keyed by the unit OC/T upon completion of proper request procedures. Unit reconstitution procedures are as follows: The S-4 or representative will be provided by a surviving unit member a complete unit battle roster identifying the status of each vehicle and/or piece of equipment from the unit that needs to be requested in accordance with the unit SOP. The unit will complete all specific requirements identified by the senior OC/T (i.e., new equipment PMCS receipt, inventories, etc.). Based upon completion of these requirements the senior OC/T will determine the unit reconstitution time. Each company/team and separate platoon will receive a reconstitution time listing. The S-4 will forward all destroyed vehicle information to his higher headquarters. There are no SBD vehicles during unit reconstitution. All vehicles are either FMC or catastrophically destroyed.

h. Immediate Reconstitution. All vehicles and equipment will be immediately re-keyed. The unit will begin consolidating forces as required in preparation for follow-on missions. No reports to OC/Ts are required.

Casualty Type	EVAC Requirement	Reconstitution Process	OC/T Validation Process	Hours Out of Combat
WIA	Role I or Role II	Appropriate treatment; BN must submit DCIPs or DA 1156 for all casualties to BDE S1	TM 24 OC/T validates treatment complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	Based on unit actions to complete treatment
DOW	BDE MACP (BSA)	Unit completes MACP process; BN must submit DCIPs or DA 1156 for all casualties to BDE S1; BDE S1 sends report to DIV	GM10B MA Trainer validates MACP process complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	IAW Continue Mission Instructions; Normally 2 hours after completion of process
KIA	BDE MACP (BSA)	Unit completes MACP process; BN must submit DCIPs or DA 1156 for all casualties to BDE S1; BDE S1 sends report to DIV	GM10B MA Trainer validates MACP process complete; TM 17/28/08 and Bronco OC/T validates DCIP or 1156 complete	IAW Continue Mission Instructions; Normally 2 hours after completion of process

Equipment Loss Type	EVAC Requirement	Reconstitution Process	OC/T Validation Process	Hours Out of Combat
Mobility or Fire Power Loss	MAINT Collection Point	Unit MAINT personnel order parts and demonstrate appropriate MAINT IAW fault identified;	TM MAINT OC/T validates correct parts identified and vehicle held for appropriate hours to complete job	Based on hours required to complete fault repairs not to exceed 6 hours
Catastrophic Loss	MAINT Collection Point	Unit orders a replacement vehicle/equipment using DA 2765 or DA 3161 to BDE S-4 and then to DIV G4; Required Info is: unit, bmpr number, type of vehicle, type of loss	TM S4 trainer, GM 05 TM, Bronco S4 trainer validate requests have been submitted through the channels to DIV G4 (GM TAFF)	IAW Continue Mission Instructions; Normally 4 hours after completion of process

8-6 Unit Assembly Area (Forward Operating Base)

1. Vehicles/equipment destroyed in a FOB/unit TAA by OC/T assessment/COEFOR action will be moved their UMCP and be taken out of play until a valid requisition has reached the BCT S4 and

verified by a Bronco OC/T. Units will follow the procedures outlined in paragraph 7-5 in requesting replacement vehicles/equipment. Vehicles under repair in maintenance collection points may fire their weapon systems if the vehicles' MILES systems are 100% operational and real or simulated battle damage does not prohibit the weapons from firing.

8-7 Material Readiness Reporting

1. **Material Readiness Reporting. Units report readiness status IAW unit SOP. TF/Separate Companies provide a daily updated copy of the DA Form 2406/026 to their respective OC/Ts. Brigade Maintenance Meetings. Units report their readiness status IAW unit SOP. The unit motor officer or representative provides current combat system maintenance status to the Logistics Trainer Team at the Brigade maintenance meeting.**

2. **SAMS Reporting. Units are required to provide SAMS reports to their respective OC/T.**

8-8 General Supplies

Table 8-8
Vehicle Cargo Carrying Capabilities

VEHICLE	NOMENCLATURE	OFF/ON PAYLOAD	TOWED LOAD LBS.	CREW/PASS	CAPACITY CUBIC FT.
M1078	LMTV	5,000 LBS.	12,000 LBS.	3/12	576
M1083	MTV	10,000 LBS.	21,000 LBS.	3/12	576
M1075	Palletized Load System	33,000 LBS.	87,000 LBS.	2	1,280
M1120	Load Handling System	22,000 LBS.	71,000 LBS.	2	1,280
M1070 w/ M1000 (trailer)	Heavy Equipment Transport	140,000 LBS.	230,000 (GCWR)	2/4	N/A
M1152	TRK, UTL 5/4T	2,500 LBS.	3,400	1/9	215
M830 M923/4/5	TRK, CGO 5T LWB 6X6	10,000 LBS.	15,000	2/20	411
M830 M927	TRK, CGO 5T XL WB 8X8	10,000 LBS.	15,000	2/0	597
M871	SEMITRAILER LOWBED 22 ½'	30,000 LBS.	N/A	N/A	855
M977	TRK, CGO HEMTT 10T 8X8	20,000 LBS.	20,000	2/0	540
M978	TRK, TNK HEMTT 2500 GAL. 8X8 TRLR, CGO 3/4T TRLR, CGO 1 1/2T TRLR, CGO 2T	2,500 GAL. 1,500 LBS. 3,000 LBS. 4,000 LBS.	20,000 N/A N/A N/A	2/0 N/A N/A N/A	N/A 175 283 N/A
M35	TRK, CGO 2 1/2T TRK, CGO 5T TRK, DUMP 5T	8,000 LBS. 10,000 LBS. 10,000 LBS.	15,000 15,000 15,000	2/20 2/20 2/15	408 580 135

1. **Movement of Supplies: All notional replicated supplies are transported on unit vehicles. The amount and type of supplies cannot exceed the weight or size capacity of these trucks. Table 8-8 specifies vehicle cargo capacities.**

2. **Class I. Units provide a listing of all ration breakdowns and the total number of rations per breakdown on a daily basis, as well as, daily reports on receiving, issues, and on-hand balance of rations to their OC/T or Goldminer team member. Water and ice are reported in the same manner as Class I rations. Units drawing rations from TISA should have a designated representative from the Class I breakpoint.**

3. **Class III. Units provide a listing of basic load Class III (Bulk) items for each of its fuel assets. The unit's POL representative ensures each fuel vehicle has the proper safety gear: gloves, apron, goggles and spill kit. The CL III (P) forecasted to the Supply Branch NLT D-60. It is maintained by individual units and any replenishment will be requested through the BDE's GSO in the rear, who collects requests to be filled by the HAZMART and shipped to the Forward DSU for distribution. The SSA warehouse maintains Class III (Packaged) in a controlled hazmat area and is responsible for the distribution of CL III(P) to the BSB, FSCs, BSTB and any additional units within the BCT (as required). Forward Support Companies or Logistic Support Teams will be responsible for maintaining and the distribution of CL III(P) to their respective maneuver battalion(s). A designated OC/T is provided with fuel accountability twice a day, once in the morning and once in the evening. No later than RSOI 4, unit POL representatives provide a Fuel Filter Effectiveness Test (FFET) to their designated OC/T prior to deploying to the box. No 'over the top' fuel transfers between vehicles or fuel trailers is authorized at NTC in order to avoid unnecessary fuel spills in the training area.**

4. **Class IV. As requested, the unit provide data pertaining to the total amount, by item of Class IV barrier and survivability material, allocated and issued by unit to the S-4 OC/T.**

5. **Class V. The Required Supply Rate (RSR) of ammunition is established by maneuver commanders NLT D-90 and submitted to Commander, NTC Material Management Center, however, requests for changes may be requested after the rotation starts. The RSRs are compared with available theater stockage and a Controlled Supply Rate (CSR) is determined and provided to maneuver commanders. Prior to the start of each mission, the TF S-4 or his representative provides data pertaining to the total amount, by type, of ammunition allocated, issued and the location of the ammunition to the appropriate OC/T. As additional ammunition is issued to the unit, the BN/TF S-4 provides the OC/T with this additional information. Ammunition may be stockpiled/cached in defensive positions. Appropriate numbers of vehicles/trips are used to emplace this ammunition and the stocks are subject to direct and indirect fire. The OC/T on the ground makes the call if the ammunition is affected based on location, efforts to safeguard it, and strike of incoming rounds. The stockpiled ammunition is represented by either "paper" ammunition or by pre-stocked MGSS and ATWESS rounds. NOTE: Appropriate flares and chaff rounds are ordered and received as paper ammunition in order to benefit from an aircraft's flare/chaff dispenser.**

6. **Destroyed Vehicles. When vehicle CVKIs are blinking continuously, those vehicles are considered destroyed, and are classified as "Catastrophic Kills". They offer no salvage or cross level value. This specifically means that ammunition cannot be taken off a dead vehicle.**

7. **Damaged Vehicles. Simulated battle damage vehicles (SBD), fire power or mobility kills, may have their ammunition or other equipment cross-leveled to other vehicles. This action is accomplished under OC/T coverage and is fully competitive.**

8. **COEFOR. COEFOR vehicles can cross-level MGSS charges to live vehicles, but not actual "MILES bullets". Soldiers transferring MGSSs must have MILES and are vulnerable to direct and indirect fire.**

9. **Class VII (Operational Readiness Float at the NTC). If a Brigade Combat Team brings one or more combat platforms to be used as an ORF, the following guidelines will govern their use:**

    a. **The weapon system MUST be instrumented with MILES prior to the system maneuvering in the rotational unit's area of operations. Units include these platforms in their MILES request prior to arrival for RSOI operations.**

10. **Class VIII. Units provide a complete listing of all Class VIII items on hand, by medical chest, to the medical OC/T as required. Units are further required to designate a location at each medical treatment facility to store medical supplies expended during the treatment of simulated casualties. Units are responsible for conducting CL VIII resupply operations to include regenerated medical supplies following treatment at the final medical treatment facility.**

11. **Class IX. BN TFs/Separate Companies provide a daily status of requisition initiated to their respective OC/Ts in a format that breaks down information by company team, by priority (02/03, 05/06, 12/13). Additionally, SAMS-E/SARSS CL IX reports may be required by respective OC/Ts. The tech supply provides a daily status of all requisitions processed and passed to their respective OC/T in a format that breaks down information by CO/TM by priority.**

12. **Sling Loads. When sling loading simulated supplies, such as ammunition, the unit ensures: Equipment. All equipment is available, including slings, tie downs, etc.**

13. **Performance Planning. The quantity of supplies does not exceed the ACL of the aircraft or the capability of the sling equipment. Internal/External. Aircraft carry the materials inboard when the actual weight of the materials is insufficient to externally sling. The combined weight of the simulated sling load and any other internal load will not exceed the aircraft ACL. OC/T Verification. Sling operation OICs allow their OC/T to verify the above data. Unit Field Sanitation Teams. Units should have at least 2 certified Field Sanitation Team members to provide guidance to the Company Commander. Units provide certification and appointed duty orders to their OC/T. Field Sanitation Teams maintain a Field Sanitation Kit and paperwork stating the equipment is on order. This information is provided to the OC/T prior to entering the box.**

14. **Preventive Medicine - Preventive Medicine personnel of the BSMC conduct daily spot checks to ensure Company Field Sanitation Teams throughout the Brigade have the proper training/ equipment and are utilized IAW applicable SOP's and regulations. The Company Field Sanitation Teams conduct routine checks of the following areas: Water point, Class I break point, Field Feeding Sites, Trash points, Sleep areas and Portalets. They advise unit leadership to ensure correction of deficiencies and enforcement of Preventive Med Standards. Unresolved issues are brought to the attention of the Preventive Medicine Office/NCO in the BSMC for resolution assistance.**

8-9 Ammunition

1. **General. Blank ammunition simulates live rounds and is issued IAW the unit's basic load or pre-established issue plan. Rotational units are issued three types of ammunition: Simulators, Replicators, and paper ammunition. While in LSA Warrior, units are authorized to have .50 caliber and below blank ammunition distributed and uploaded. Units are also authorized to upload paper ammunition and Replicators within LSA Warrior. All MGSS charges and ATWESS rounds remain outside LSA in the ASP or a Field ASP until the unit departs, at which time they can be issued to the unit.**

2. **Red Pyro. Red Smoke and Red Star Clusters are not authorized for use by BLUFOR. Red Smoke and Red Star Clusters are only carried by OC/Ts in case of an emergency.**

3. **CS. BLUFOR and COEFOR units are never authorized to use Chemical Smoke (CS), artillery, or hand grenade simulators.**

4. **Simulators and Direct/Indirect Fire Cue (DIFCUE). Simulators are ordered IAW unit SOP and handling instructions outlined in the following paragraphs of the EXOP.**

5. **ATWESS. ATWESS is color coded to differentiate between AT-4, DRAGON, TOW, Javelin, and STINGER missiles. Units have the responsibility of color coding the ATWESS rounds in the Field Ammunition Storage Point (Field ASP) prior to issue or transport to their units. Any non-color or multi-color coded ATWESS is designated as duds and confiscated by a OC/T. The NTC standard color codes for ATWESS are:**

   RED TOW/HELLFIRE Missiles
   YELLOW AT-4 Missiles
   BLUE Stinger Missiles

6. **Due to ammunition restrictions during live fire operations, units are not be issued actual rounds for weapons systems which utilize ATWESS charges to simulate weapons effects with MILES systems. In order to enable units to engage targets with these weapons systems, live fire targets are fitted with LTDS to detect hits by MILES systems. When live missile and/or rocket munitions are not available, ATWESS rounds are maintained throughout the rotation. During the draw of live fire ammunition, the ATWESS charges representing missile/rocket munitions remain under unit control.**

7. **MGSS. One MGSS charge represents one main gun tank round.**

8. **Replicators. Ammunition replicators are issued by the NTC for use during Force-on-Force.**

9. **Mines. There is a set number of mines available to the brigade. Mines may be shifted IAW the brigade's main effort within the ammunition handling instructions outlined in the EXOP. All mines will be disarmed and repacked in their original storage containers prior to movement. Currently, conventional mines are not issued to units.**

10. **Demolition. The amount of inert demolitions available to each engineer unit approximates an offensive basic load. BLUFOR units use these items exclusively to replicate breaching charges during offensive missions in Force-on-Force.**

    a. **The items include: C4, shape charges, cratering charges, det cord, electric and non-electric blasting caps, time fuse, igniters and Bangalore torpedo sets. Live non-electric blasting caps, det cord, time fuse, and fuse igniters are used in Demolitions Effects Simulators (DES). These items must be built by rotational units and must be drawn from the rotational unit field ASP.**

    b. **At the completion of a breach, the OC/T on site recovers the inert demolitions used and maintains the demolitions until the rotational unit requisitions and is resupplied with demolitions. The OC/T then reconstitute the demolitions.**

    c. **At the infantry platoon/company level, TOW and Javelin rounds are replicated with a simulated round of comparable size and weight requested and received through Class V channels. The weight of each mortar round is replicated with sandbags as outlined below:**

       60mm Mortar: 4.5 pounds = ¼ full sandbag
       81 mm Mortar: 9.5 pounds = ½ full sandbag
       AT-4 (Viper): 15 pounds = ¾ full sandbag
       Javelin: 21.6 pounds = 1 full sandbag

    d. **MRE hand grenades. MRE hand grenades are made by the rotational unit and issued based on DA 581 requests.**

e. Satchel charges. Satchel charges are permissible at the NTC. If the satchel charge is correctly constructed, it effect on personnel and equipment. The OC/T on site determines the effects of the satchel charge. The charge damages or destroys bunkers, aircraft, and personnel. The 10 meter rule applies in the emplacement of the satchel charge.

11. Paper Ammunition. Paper ammunition placards are used for those ammunition types not simulated or replicated by other methods. Units follow the same request and handling procedures for paper ammunition as those required for other ammunition types. The following types of paper ammunition are issued:

25mm BRADLEY
60mm HE / WP / ILL
81mm HE / WP / ILL
120mm Mortar HE / WP / ILL
155mm Artillery: HE (M107, M795) / WP (M825, M110) / ILL / HERA / BB / CPH / ICM (HE, DP, BB) / ADAM & RAAM (L, S) / GB, WB, RB, 8S Excalibur
105mm Artillery: HE (M1, M760) / SMK (HC, WP) / HERA / ILL / HEP / ICM / M760 / APERS-T
Launch Pod Munition Type: JED / JEH / JTB / JEL / JEE / JEN / JTC / JTG
2.75 in Rockets
30mm
Chaff/Flares
Hellfire Missiles

12. Firing. When a crew fires a weapon system for which paper ammunition is issued, the appropriate number of paper ammunition placards are returned to the unit OC/T. OC/Ts ensure the amount of ammunition represented by the placards on hand matches the number of MILES rounds available to fire.

13. Resupply. Paper ammunition is issued at two locations during the rotation. First, it is issued by the Forward Support Company Observer/Controller in LSA Warrior during initial upload, after the DA581s have been validated. Second, paper ammunition is issued by the Goldminer ATHP trainer at the ATHP site once DA581s and transportation hauling capabilities are validated. Paper ammunition is regenerated through the FSC OC/Ts back to the Goldminer ATHP trainer. Ammunition resupply times are IAW unit level SOP.

14. Paper Ammunition Transfer. In order to transfer paper ammunition, the ammunition placard is physically transported to the gaining unit IAW proper handling procedures. OC/Ts ensure the losing vehicles MILES ammo count is reduced to reflect the transfer of ammunition. The gaining vehicles MILES count is not increased until the ammunition placard is on-hand.

15. Engineer Ammunition for Counter-Mobility: All CL V engineer counter-mobility replication devices used during STX and/or Force-on-Force operations are requested by brigade through the TAS-C. All CL V replication devices capable for coordination and pick-up will be conducted NLT RSOI 4. Replication devices capable for coordination and pick-up are as follows: M139 Volcano Mine Dispenser and M131 Modular Pack Mine System.

16. Engineer Ammunition for Mobility: All CL V engineer mobility simulation devices used during STX and/or Force-on-Force operations are requested by brigade through NTC. All CL V simulation devices will be coordinated NLT RSOI 4 for pick-up at rotational unit field ASP. Simulation devices capable for coordination and pick-up are as follows: M58 Mine Clearing Line Charge (Empty Tub) and Smokey Sam Simulator

17. Ammunition Handling. Ammunition resupply operations to include FASPs, ATHPs, and Combat Configured Loads (CCLs) under the MOADS (PLS) are conducted to the highest possible degree of realism within the NTC scenario. Units plan to exercise all functions of logistics support for

Class V resupply operations. The following paragraphs outline the minimum requirements a unit is expected to follow in conducting resupply operations at the NTC.

18. **Corps Storage Area (CSA). NTC's ASP is the CSA for the theater. The CSA issues Class V. The CSA has no transportation capability in Theater but does possess MHE. Rotational Units request ammunition through NTC Support Brigade during the Logistics Recon. Requests for additional class V during rotation go through the BAO to the Corps (NTC) ASP. Unit Basic Load (UBL). The unit's basic load of ammunition prescribed by the unit's organizational makeup.**

19. **Controlled Supply Rate (CSR). Class V drawn from the CSA is the total amount of Class V available for the exercise. The DAO determines the UBL and establishes CSRs for resupply to battalions/brigade on a daily basis for the exercise. For engineer special munitions, the CSR represents a "maximum stockage level", or, the maximum number the BCT may have on hand at any given time.**

20. **Unit Storage Site. The unit storage site is a generic term for the unit's establishment of an ATHP, ASP, or Forward Ammunition Storage Point (FASP).**

21. **Request for Issue from CSA. The 52ID Sustainment Brigade provides the incoming unit a list of the total ammunition available at the Theater's CSA to draw. The CSSB SPO contacts incoming units and requests in detail the required documents needed for issue and receipt of Class V from the CSA. The following are required documents: DA Form 581. One is required for the Force-on-Force and another is required for the Live Fire exercise. DA Form 1687. Appointment orders must be included with the form. The ASP matches DA Form 581s against the unit's allocation. DA Form 581s and DA Form 1687s are passed to the OIC of the ASP to prepare for issue. The BAO coordinates issue of class V with the ASP in order to ensure Class V is pre-positioned and prepared for issue prior to the unit's issue date(s).**

22. **Receiving Class V from CSA. Units transport all Class V drawn from the CSA. Vehicles will not be loaded beyond their capacity in weight/cube of simulators, replicators or paper ammunition (Table 8-13 Figures 3 and 4). The CSA verifies vehicles meet DD Form 626 standards prior to loading. Any vehicle not meeting DD Form 626 standard is not permitted to transport munitions of any type.**

23. **Accountability. The BAO or his representative presents all of the unit's suspense copies of DA Form 581 to the CSA OIC the day of initial issue. The CSA OIC prepares DA Form 3151 for signature by the FASP Accountable Officer. A copy of DA Form 3151 is provided to the FASP Accountable Officer and the BAO to establish accountability records at the FASP and ATP. The BAO maintain copies of the DA Form 581s and certificates of destruction for accountability.**

24. **Actions taken at the Field ASP prior to issue to units or shipping to ATPs: Accountable Officer loads, prepares, and ensures connectivity of SAAS-MOD. Accountable Officer files the following documents: DA Form 581, DA Form 3151 and Issuing Class V from Unit's Storage Area at STARTEX for TFs.**

25. **The Field ASP/ATHP issues Class V IAW unit SOP using the following documents for both the Live Fire and Force-on-Force exercises: SAAS-MOD, DA Form 581, DA Form 1687/assumption of command orders and Class V issue from the FASP/ATHP.**

26. **The TFs conducting Live Fire and Force-on-Force draw Class V not to exceed their UBL, however, units in the defense may stockpile additional days of supply. Resupply operations are conducted daily by the TFs support element, BSB assets and EAB assets. The use of Combat Configured Loads is authorized.**

27. **Vehicles used in transportation of Class V from the Unit's Storage Site to the user are required to be inspected and meet DD Form 626 standards. The DAO or his appointed representative is**

authorized to validate DD Form 626s. Vehicles will not be loaded beyond their capacity in weight or cube.

28. **Brigade and Battalion S-3s and S-4s, in conjunction with the BSB SPO and BAO representatives at the ATHP, FASP, and MMC plan for continuous resupply operations throughout the rotation. Importance is placed on planning for transportation and MHE with respect to the changing missions of each TF.**

Table 6-1 Figure 1
Vehicle Mine Carrying Capabilities

	5/4 Ton	2 ½ Ton	5 Ton	10 Ton	22 Ton
M21	27	54	111	12	203
M15	551	104	204	408	712

Table 6-1 Figure 2
Ammunition Transportation Capabilities

Pallets – Full Weight and Cube

Nomenclature	5 Ton	HEMTT	Low Boy	PLS	S&P Tlr
120mm Tank	4	8	14	10	16
155mm Arty	12	27	30	37	56
155mm Propellant	T4	7	14	16	16
155mm Copperhead	6	8	14	12	16
105mm Arty	4	8	14	10	10
40mm MK19	6	8	14	10	10
TOW	4	6	6	8	8
Dragon	4	6	6	8	8
Stinger	4	6	6	8	8
AT-4/Viper	4	8	14	10	16
25mm	4	6	8	16	16
M21 Mine	4	8	14	10	16

Table 6-1 Figure 2
Ammunition Transportation Capabilities

M15 Mine	4	8	14	10	16
MOPMS / APOBS (# mines)	61	94	308	110	148
Hornet (# mines)	5	8	27	9	13
Hellfire	4	5	8	10	12
2.75in Rocket	4	5	8	10	12
5.56mm	4	8	14	10	16
7.62mm	4	8	14	10	16
.50 cal	3	6	12	10	14
Rkt Mtr MICLIC	4	10	18	10	18
MICLIC	0	3	5	4	6
60mm Mortar	4	8	14	10	14
81mm Mortar	4	8	14	10	16
120mm Mortar	5	10	14	10	14
Volcano Honeycomb	4	8	14	8	16

Table 6-1 Figure 3 Vehicle Stinger Missile Carrying Capacities						
	M998	M113	M35	M923	M978	M101/M105 Trailer
# of Missiles	6	6	39	42	72	18/22

Table 6-1 Figure 4 Ammunition Transportation Capabilities			
120mm Mortar Box Ammunition			
Nomenclature	**Capacity**	**Boxes**	**Rounds**
Trailer 3/4 Ton	1,500 lbs	18	37
Trailer 1 1/2 Ton	3,000 lbs	37	75
Trailer M997 10 Ton	20,000 lbs	250	500
Trailer 22 Ton	30,000 lbs	375	750
M998 5/4 Ton	2,500 lbs	31	62
Truck 2 1/2 Ton	5,000 lbs	62	125
Truck 5 Ton	10,000 lbs	125	250
Note: Information obtained from equipment –10 manuals			

29. **General Ammunition Considerations. Within the brigade, an ammunition storage site (ATHP/ASP/FASP) is established to handle the transfer of Class V to units. Units use organic assets to load and transport the Class V items they requested from the field ASP to their subordinate units.**

30. **Verification. Once resupply to subordinate units is completed, the OC/T on site collects or marks off the number of boxes/rounds transferred to their units from the placards. When units transfer all of the Class V from a pallet, the unit repositions the pallet(s) within the cargo vehicle to make room for material or equipment for backhaul. Pallet(s) are returned to the ATP during the next established pickup.**

31. **Excess Ammo. OC/Ts confiscate excess ammunition carried by vehicles and individuals. Vehicles and individuals are assessed as SBD and casualties as necessary for carrying excess ammunition. Ammunition exceeding the carrying capacity of a vehicle or convoy is confiscated by OC/Ts. Class V confiscated from the convoy is redesignated at its origin; units are then required to send appropriate vehicles back to recover the Class V.**

32. **Transportation. All ammunition, simulators and paper, is treated as if it had the same weight and mass as the rounds it represents. For example, one MGSS charge equals the weight of one take main gun/howitzer round. NTC EAB is exempt from this requirement when transporting simulators, replicators or paper ammunition from the FASP to the BSB ATHP.**

33. **Handling. All ammunition will be handled by enough personnel to move it, for example, one Soldier can safety lift only one tank main gun or TOW round and is allowed to lift one MGSS or ATWESS charge. A single Soldier may not carry more than the following number of ATWESS charge(s): one TOW, two AT-4s, or two stingers. This limit includes the loading of ATWESS in the weapon systems, if applicable.**

34. **Destruction of Ammunition: If a vehicle is destroyed, any ammunition on board is destroyed with it, and a new requisition is submitted. Class V cross-leveling will not be done with destroyed vehicles.**

35. **Blank vs. Live. Blank and live ammunition will be separated by the maximum extent possible. Blank and live ammunition will NOT be stored on the same pallet. Blank and live ammunition may be stored on the same PLS flat-rack, but will be separated by space and/or a physical barrier.**

Blank and live ammunition may be transported on the same vehicle, but must be separated prior to issue.

36. **Field Artillery Ammunition: Upon receipt of DA Form 581, the Ammunition OC/T at the FASP issues the field artillery ammunition placards NTC 1165-4-R representing the quantity of projectiles, and propellants issued.**

    a. **Delivery. Ammo vehicles must be physically present to receive their placard. When ammunition is delivered to a battery, the ammunition vehicles must move to the battery position. One of the battery OC/Ts inspects the placard and deducts the quantity of ammunition delivered from it. The placard remains with the ammunition vehicle.**

    b. **Times. Since the ATHP may not be open continuously, the brigade should coordinate ammunition pick-up times. The FA battalion requests ATHP appointments from the supported brigade if the artillery is DS or reinforcing. If the artillery is GS or GSR, the ATHP appointments are scheduled through the 52ID Fires Brigade.**

    c. **Firing. Batteries may fire only those projectile, fuse and propellant charges they have on hand. Batteries track ammunition internally IAW unit SOP; their counts are checked for accuracy by battery OC/Ts.**

37. **Notional Units. Artillery headquarters controlling notional fire units receive their ammunition as directed by their OC/Ts.**

38. **MLRS. MLRS ammunition is issued on a placard indicating the number of launch pod containers (LPCs). In the event the unit does not have extra LPCs in order to train reload operations, the transfer rate for MLRS is 12 minutes per LPC to the launcher and 10 minutes per LPC to the HEMMT or Trailer.**

39. **155 Transfer. Ammunition transfer rate for 155mm is one complete round per man per minute if done manually and eight rounds per minute by a HEMTT using its material handling equipment (MHE). Ammunition transfer rate for 105mm ammunition is three rounds per man per minute if done manually and 30 rounds per minute by a HEMTT using its material handling equipment (MHE).**

40. **Field Artillery Unit Basic Loads (UBL) and Controlled Supply Rates (CSR) UBL. Field artillery UBLs will be approved by 52ID Fires Brigade, which will give the battalion its CSR. The CSR and UBL will be issued on ammunition placards.**

    a. **Immediate Request. Ammunition for immediate consumption must be requested from the 52ID Fires Brigade.**

    b. **Vehicle Capacity: Vehicles may carry the number of complete 155mm rounds indicated below. Self Propelled Howitzers may carry a 10% overage of fuses, primers, and propellants.**

M1096A	**37**
M548	**96**
M992	**90**
M35 series	**48**
M813/M913 series	**100**
M985	**200**
M1074/5/6	**176**
Ammunition Trailer	**8**

41. **Aerial Resupply. Units may conduct aerial resupply provided they meet the requirements listed in FM 55-450-2.**

42. **Requests. Ammunition is requested and approved through normal channels on DA Form 581. Personnel trained to load and handle hazardous cargo must be on hand to perform prescribed duties. Equipment such as cargo nets, cargo to be transported and helicopters must be present at the pickup site, and be physically transported to the site of the resupply.**

43. **Capability. Simulated loads will not exceed aircraft or environmental load limitations.**

44. **Pallets. When palletized training ammunition containers are available, they will be used in the following manner:**

45. **Origin. From LSA WARRIOR forward to the point of transfer to the using unit, unit must carry pallets to represent the ammunition being delivered. The point of transfer will usually be a BSB ATHP, although there may be some direct deliveries. The LSA WARRIOR unit must carry enough pallets to replicate the amount and type of ammunition being delivered. The pallets will be accompanied by shipping documents which specify the type and quantity of ammunition being delivered. All simulators must also accompany pallets from the FASP forward. LSA WARRIOR units are allowed to stack pallets on their trucks.**

46. **Transfer. On arrival at the point of transfer, the pallets of ammunition take on the full weight and cube of the ammunition they replicate. The ATHP and the receiving unit must handle and store the training ammunition pallets as if they were the full weight and cube of the ammunition that they replicate.**

47. **Air Movement. Ammunition moved by sling load takes on full weight and cube at the FASP Helipad.**

48. **Card Issue. At the point of transfer, the maneuver team OC/Ts issue paper cards to represent individual rounds. This issue is based on the amount of ammunition replicated by both shipping documents and pallets. The LSA Warrior transportation elements off load all of the pallets and the task force FSC assets load them.**

49. **Backhaul. Support units will retain the pallets, even after issuing the ammunition to the company teams. Once the ammunition is issued, the task force trucks may stack pallets using the same criteria as the LSA Warrior. Distribution platoons must backhaul residue when they go to pick up their next load, and exchange the containers with the new load coming from the FASP. LSA Warrior trucks will drop their containers and pick up the used containers from the Distribution Platoons.**

50. **Force on Force before LFX. If Force-on-Force comes before Live Fire, support units must carry enough pallets to replicate the ammunition carried on the support trucks, that is anything above the amount carried in combat vehicles. LSA Warrior trucks must backhaul all pallets of training ammunition containers with the residue for Force-on-Force during the transition to Live Fire.**

51. **LFX before Force on Force. If Live Fire comes before Force-on-Force, then LSA Warrior may only send forward the ammunition to go inside combat vehicles as part of the transition, and does not have to send out any pallets of training ammunition containers. To get more ammunition beyond the basic load of the combat vehicles, LSA Warrior must wait until the transition from Live Fire to Force-on-Force is over, and then must conduct resupply operations as described above.**

52. **Empty Containers. When empty training ammunition containers are available, the following rules apply:**

53. **Maneuver Units. Draw loose training ammunition containers during RSOI and place them into the combat vehicles and in the loads of the dismounted infantry. Except for the dismounted infantry, these containers remain with the vehicles until their return to the LSA Warrior.**

54. **Mortars. Light mortar ammunition (60 and 81mm) are issued from the cans to the dismounted Soldiers or the carriers as appropriate. The support platoon will open the metal containers, issue out the fiber inserts, and retain the empty cans. The maneuver OC/Ts place paper cards specifying which type of mortar round the fibers represent. When the round is fired, the OC/T takes the paper card and the Soldier returns the fiber to the support platoon. As more ammunition is delivered, mortar containers filled with empty fibers are exchanged for new containers.**

55. **Transition. Dismounted infantry exchange 60mm and 81mm mortar containers for live rounds on a one for one basis during the transition between Force-on-Force and Live Fire. The light truck platoon attached to the light infantry battalion will assist LSA Warrior in moving the light mortar ammunition.**

8-10 Unit Ministry Team

1. **Religious Support Participation in Rotation. Chaplains and Chaplain Assistants are full participants during the brigade's training mission.**

2. **Support Plan. Each UMT provides their Religious Support Plan to the BCT UMT prior to RSOI 1. The BCT UMT presents digital copies of all religious support plans at the in-brief on RSOI 1. UMTs also furnish subsequent changes to their basic plan to the UMT Trainers throughout the brigade mission.**

3. **In-Briefs. Each UMT attends the in-brief on RSOI 1 and classes on RSOI 2 and RSOI 3 in BLDG 592.**

4. **Religious Support Guidance. UMTs are responsible for providing religious support to their units at the appropriate times and locations in consideration of the brigade mission and overall situation.**

5. **OC/Ts will not get involved with the content of religious worship services, however; OC/Ts provide feedback on whether UMTs conduct worship services in a professional manner and take into consideration the tactical environment.**

6. **The installation Chaplain's Office is operationally *Off Limits* for direct ecclesiastical support, except as outlined for "real word" situations. UMTs should deploy with the adequate resources to provide religious support to their units. RTU Soldiers may attend worship services at the Installation.**

7. **Real World Emergencies. UMTs can use the most expedient and mission safe routes to bring ministry to "real world" emergencies, as long as it does not interfere with the overall training mission. The Fort Irwin Chaplain's Office has responsibility for the care and ministry to "real world" emergencies and will carry out this mission.**

8-11 Evacuation and MCPs

1. **Vehicle Evacuation from the NTC Training Area. Any vehicle that units wish to evacuate from the NTC training area back to the LSA WARRIOR during the course of a rotation must meet one of the following criteria:**

    a. **Vehicle is non-repairable at the Field maintenance level and requires Sustainment level maintenance.**

b. The required part(s) to fix the vehicle are not available and/or have an ESD that exceeds the estimated remainder of the campaign.
c. Vehicle is found by an ECOD to be uneconomically repairable.
d. Vehicle is damaged in an accident/rollover that prohibits its further operation.
e. Vehicle type is affected by a Safety of Use Message (SOUM), and condemned from use, until an action that cannot occur in a field environment takes place.

2. RFI. Units submit a 52ID / X Corps RFI through the G3 for approval (Goldminer 07). The RFI must include an evacuation plan, maintenance plan to include the higher source of maintenance's accepting job order number, or estimated receipt date of necessary repair parts with valid status.

8-12 Aviation Logistical Operations

1. There are two separate methods for replicating the supply, transportation, and time requirements to logistically support an aviation task force; the Paper Ammo method and the Replicated Load method. Based on resources available, the senior aviation trainer will specify the method to be used at the beginning of each rotation. Units should plan their logistical resources of equipment, personnel, and time as they would in actual combat in a mid to high intensity conflict.

2. Paper Ammo:

Table 8-13 Figure 1
Aviation Ammunition Loading Times

	HELLFIRE	Rocket Pods	30MM/.50	30MM w/side loader
1 MAN	NA	20-40 min	NA	20 min
2 MEN	10-20 min	10-20 min	30 min	15 min
3 MEN	5-10 min	5-10 min	25 min	15 min

3. Tracking. Hellfire missiles, 2.75-inch rockets, OH-58D .50 caliber machine gun, and 30mm are notional and are tracked on an 8x10 inch Ammunition Loading card defining the number of rounds. This card is then transported IAW the actual weight and dimensions of the ammunition. This "paper" method is also used when aviation units are transporting ammunition and supplies for ground forces (e.g., 155mm artillery ammunition). Small arms for M-249, M-240, M-4/M-16, and .50 cal MGs are replicated using actual blank ammunition.

4. Ammunition Transportation: Missiles and rockets can be transported using non-shipping containers weights as an aircraft internal load. Ammunition transported in ground vehicles and aircraft sling loads should be calculated as being in their shipping crates. Should ammunition be transported either in a sling load or a ground vehicle without shipping crates it will be considered unserviceable due to shock and vibration.

5. Ammunition Overloading: Ammunition and paper that is being transported in an aircraft or vehicle beyond the capability of that aircraft or vehicle will be confiscated by an aviation CT and the vehicle or aircraft assessed as a maintenance loss due to overloading. Each aircraft or vehicle must only carry its realistic load. A convoy of vehicles or flight of aircraft cannot, for convenience, place all the *"paper ammunition"* in the lead aircraft or vehicle and "simulate" the ammunition as being distributed throughout. FM 4-30.13, and other applicable DA approved manuals will be used as the base reference for load data.

6. Ammunition Breakdown Time Tables: Ammunition other than actual blank ammo will follow the below prescribed breakdown times prior to being able to use the PAPER ammunition. To determine the total time to breakdown a given load of ammunition, multiply the ammunition time factor by the amounts of ammunition, then divide by the total number of personnel available. For example, if 10 Hellfires were transported and five personnel were to break down the ammunition,

multiply 10 Hellfires at 1 minute each for a result of 10 minutes. Divide 10 minutes by the number of personnel, and the total time to break down the ammo comes out as 2 minutes. All break down times will be DOUBLED with the absence of a forklift or suitable mechanical lifting boom.

Table 7-13 Figure 2
Aviation Ammunition Breakdown Times

	Hellfire	Rockets	Cannon
Breakdown Time	1 min / 1 missile	1 min/ 4 rounds	1 min / 100 rounds

7. **Attack Aircraft Re-Arming Time Table: Table 7-13, Figure 1 prescribes the necessary time an attack aircraft must remain on the ground versus the number of dedicated re-arming personnel. The re-arming personnel can be any MOS and must be standing outside the aircraft and not engaged in refueling. Units can simulate re-arming and refueling at the same time by conducting re-fueling then repositioning the aircraft to a re-arming point. The time determined by the table to effect the desired reload will begin while the aircraft is in re-fuel. An additional five minutes per aircraft penalty will be added if all of the personnel effecting re-arming are not armament MOS, attack aircraft crew chief, or rated pilot. Time requirements are for the desired ammunition loads only (e.g., if a unit wants to reload an AH 64 with 16 Hellfires and two personnel, then the time the aircraft will have to remain on the ground is 18 minutes). This time can begin during aircraft re-fueling). Aircraft found to be in violation of the below table will be assessed as destroyed due to a notional re-arming incident. Table 7-16 Figure 1 is applicable per each aircraft.**

8. **Replicated Load Method: This method uses inert Hellfire missiles and sand-filled shipping crates to help replicate the transportation requirements and reload times.**

9. **Inert Hellfire Missiles: Upon arrival at the NTC, the unit will sign for a "Replicated" Class V Hellfire UBL. Aircraft will execute re-arm times by landing at the re-arming point, removing the inert training Hellfire missiles, laying them on the ground, then immediately reloading them into the available missile positions. The number of missiles keyed in the inventory will correspond to that of the number of missiles reloaded plus missiles remaining upon arrival prior to the beginning of the reload.**

10. **Replicated Loads: Sand filled crates will be used to replicate the size and weight of the actual ammunition shipping crates. The crates will be organized in pallets at the Division ASP. Upon arrival at the NTC, the Brigade/Regimental ammunition officer will sign for the pallets and issue them to the unit IAW appropriate requisitions. The unit will then transport the crates as they would in actual combat. Units are responsible for rebuilding the pallets after change of mission and placing them in their original condition at the end of rotation.**

11. **Rocket and Cannon Reloading: Table 7-13, Figure 2 will be used to replicate the time and personnel required to effect re-arming.**

12. **Other Ammunition and Supplies: All other supplies and ammunition not directly replicated by an inert round will be played IAW the conditions outlined in paper ammunition method.**

13. **Air Volcano ammunition breakdown. Air Volcano ammunition will be broken down at the rate of 1 Man Hour/ 40 Canisters. For example, four Soldiers break down 160 canisters in 1 hour.**

14. **Air Volcano load times are listed in Table 7-13, Figure 3 for broken down load.**

Table 7-13 Figure 3 Volcano Loading/Unloading Time		
Team	Canister Upload (160)	Empty Canister Download
6 Personnel	6 Min.	4 Min.
4 Personnel	10 Min.	5 Min.
2 Personnel	15 Min.	8 Min.

8-13 Tactical Convoy Operations

1. **Use of MSRs. All MSRs and ASRs to include all paved roads, unimproved roads, and tank trails are available for use by rotational units. The hardball surface of Barstow road and the cantonment area are off limits to all tactical convoys. Further restrictions will be specified in the 52ID deployment order.**

2. **Convoy Speed Limits. Proper convoy speeds must be adhered to for safety. See Chapter 1.**

3. **Tactical Convoy Operations. All movements within and outside of the brigade sector are considered tactical movements, and must be tracked at the appropriate echelon. Prior to Tactical Convoy Operations the RTU must establish a convoy commander who conducts a convoy briefing prior to initiation of movement. The convoy commander will ensure all vehicles have a TC and loads are properly secure. Observer Coach/Trainers will validate that the RTU has conducted their composite risk management prior to SP. At a minimum, the RTU will identify the most mission critical environmental, safety and tactical (ELCOA / EDCOA) hazard, and implement control measures for each hazard prior to SP. It is highly encouraged that the RTU convoy commander uses a RM sheet to develop their RM during mission planning. The RM sheet must have the appropriate signature for the level of risk associated with the operation. At a minimum, the RTU will rehearse roll over drills, fire drills and real world MEDEVAC prior to SP. The RTU is not limited to battle drill rehearsals listed above, and is highlu encouraged to conduct additional rehearsals (IAW with FM 5-0, The Operations Process, Appendix I) that are essential for mission execution. All gunners must have gunner's restraint systems when manning gun trucks. Gun trucks that do not have gunner restraints will not be allowed to operate weapons while the vehicle is in motion.**

4. **The convoy commander will develop a mission manifest / trip-ticket prior to SP, and provide their escorting OC/T the following information: Planned SP Time, Route, Destination(s), Frequencies and Call Signs, Type and quantity of supplies to be transported, Number of personnel and Number and type of vehicles.**

8-14 Echelon Above Brigade (EAB) Support Units

1. **ROE. The Echelon Above Brigade (EAB) support units are required to follow the EXOP and Rules of Engagement with the following exceptions:**

2. **Rotational EAB Battalions: All convoys crossing the light line require OC/T escort for safety and event coverage. The EAB battalion assigns a convoy commander for each convoy. The convoy commander provides the escorting OC/T with the following: SP time, Route, Destination, Frequencies and call signs, Type and quantity of supplies, Number of personnel and Number and type of vehicles.**

3. **EAB convoys can use the hard surface road and approved MSR/ASRs for resupply convoys moving to the BSA or live fire area except for MSR Bull Run (Barstow Road). EAB Convoys use the tank trails adjacent to MSR Bull Run.**

4. **All Soldiers and vehicles crossing the light line are considered competitive and will have operational individual and vehicular MILES, to include the Brigade Logistic Support Team (BLST). TVS is the standard for vehicular MILES with MIK instrumentation. If the MILES warehouse is unable to support 100% MIK instrumentation, at least one vehicle per convoy will have the instrumentation to facilitate NTC-IS tracking for AAR purposes. The only exceptions are vehicular MILES for HETs and Civilian refrigerator trucks. Any other exception requires Commander of Operations Group approval.**

5. **NTC Contracted EAB Battalion: Convoys crossing the light line require OC/T escort for safety and event coverage. If OC/T coverage is unavailable, the contracted EAB contacts the Goldminer TAFF for authorization to cross the light line. The Goldminer TAFF coordinates with OC/Ts at the destination for arrival and departure time. The contracted EAB battalion assigns a convoy commander for each convoy. The convoy commander provides the escorting OC/T with the following: SP time, Route, Destination, Frequencies and call signs (if FM/RCS equipped), Type and quantity of supplies, Number of personnel, Number and type of vehicles**

    a. **The contracted EAB Battalion supports up to two convoys per day during convoy windows of 0800-1100 and 1300-1600) and is prepared to support emergency/high priority convoys as required. The rotational unit should provide a six hour notification for emergency resupply. If the contracted EAB Battalion is unable to support an emergency resupply, the rotational unit can return to FOB Warrior and acquire the needed item with approval to do so from 52 ID.**

    b. **EAB convoys will use the hard surface road and approved MSR/ASRs for resupply convoys moving to the BSA or live fire area. White light will be used for night operations.**

6. **All Soldiers and vehicles crossing the light line are considered competitive and will have operational individual and vehicular MILES, to include the Brigade Logistic Support Team (BLST). MILES I is the standard for vehicular instrumentation. If the MILES warehouse is unable to support 100% MILES2 installation, at least one vehicle per convoy will have the MILES II tracking equipent, to facilitate NTC-IS tracking for AAR purposes. The only exceptions are vehicular MILES for HETs and Civilian refrigerator trucks. Any other exception requires Commander of Operations Group approval.**

7. **Contractors working for the NTC Contracted EAB Battalion are not required to wear individual MILES, however their vehicles will have operational MILES. Contractors will stay with their assigned vehicle throughout the resupply mission except when sharing convoy debrief, manifest and route update with the rotational unit.**

8. **EAB Contractors supporting the rotation replicate a KBR type contractor organization by wearing a common uniform, wearing a Ballistic Helmet, and carrying a EAB issued photo identification identifying them as EAB employees.**

9. **EAB contractors will not move north of phase line Dragon without IBA and OC/T coverage. If IBA's are unavailable, EAB contractors can be escorted north of phase line Dragon with OC/T escort if the live fires ranges are green and clear and the OC/T has permission from DTOC.**

10. **EAB contractors will allow searches of their assigned vehicles by rotational unit personnel. The EAB contractors will also follow the convoy security directives from the rotational unit. These directives may include, but are not limited to, routes, MSR/ASR clearance times, stopping, getting out of vehicles, adjusting vehicle speed and opening compartments of the vehicle to allow vehicle searches.**

11. **Convoy speed will not exceed 25 MILES per hour.**

12. **Contracted EAB Battalion trucks will stop if the vehicular MILES is activated or instructed to do so by an OC/T. In the event of COEFOR attack, the OC/T adjudicates convoy KIAs, lost supplies, damaged and destroyed vehicles. The EAB convoy will remain together as one element to continue to its destination, however, supplies and equipment lost are not downloaded or provided to the rotational unit, and destroyed supplies and equipment must return to FOB Warrior. The only exception is ice, water, Class I and Class VIII. All other exceptions must be approved by the Commander of Operations Group.**

13. **EAB contractors are not subject to capture by the COEFOR. Contractors will provide a verbal description of events, when asked to do so, pertaining to incidents that occur during their resupply mission. Contracted EAB unit equipment is immediately reconstituted upon return to LSA Warrior.**

14. **Contracted EAB resupply convoy will allow two hours for the receiving unit to download supplies. After the two hour period they may, at the convoy commander's option, return to LSA Warrior in order to replicate the need to maintain delivery schedule to other brigades. The rotational unit is responsible to offload cargo from the contracted EAB Battalion. The rotational unit may add vehicles to the contracted EAB convoy with convoy commander approval. The contracted EAB Battalion requires the rotational unit to sign for received supplies.**

15. **The contracted EAB Battalion is responsible for recovery operations in the event of a mechanical breakdown. If OC/T coverage is unavailable for recovery missions, the contracted EAB contacts the Goldminer TAFF for authorization to conduct the recovery mission. The Goldminer TAFF coordinates with OC/Ts at the breakdown site.**

16. **The rotational unit reports resupply requirements daily on LOGSTAT via VSAT to the EAB Support Operations, no later than 1200 hours. If the rotational unit is unable to submit their requirement via VSAT, the contracted EAB Battalion receives the LOGSTAT from the DTOC.**

Chapter 9
Aviation

CHAPTER 9 – AVIATION:

9-1 Aircraft Markings

1. **General: All aircraft will be marked in white chalk with 2 inch think numbers that are 30 by 30 inches. These numbers will be designated by the aviation OC/T team. For UH-60 aircraft, the numbers will be placed midway on both sides of the tail boom. On the OH-58D, the numbers will be placed on the aft avionics doors. Chalk numbers will be placed on both AH-64 engine nacelles. For CH-47 aircraft, the number will be placed on both sides of the aft pylon. OC/T aircraft are painted OD green and orange and do not have chalk markings.**

9-2 MILES and Instrumentation

1. **MILES/AGES Equipment. All aircraft must have an operational MILES/AGES system installed in order to operate in the designated maneuver area forward of the NTC Light Lines (the "box"). MILES will remain "ON" at all times, except during required maintenance operations or bonafide emergencies. Aircraft found with MILES equipment turned off will be referred to the unit chain-of-command and assessed as a Penalty Kill. Aircraft will have all required ASE equipment (if available) installed and operational in order to receive credit for the reduced vulnerability capability of MILES/AGES-II. All personnel must wear an individual MILES system to include HALO (HALO and IWS harness are not required on crew members during flight) when inside the designated maneuver area to include assembly areas or logistic bases The MILES harness is not required while conducting pre-flight or maintenance on the aircraft; upon leaving the aircraft the harness must worn. OH-58 MILES skid lights must remain installed. If the lights are removed for ground handling purposes, then the unit must re-installed all removed equipment upon completion of ACFT ground handling. Damage to contracted equipment by removal and re-installation of rotational unit, may result in financial charges to the unit.**

2. **Aircraft Instrumentation. All aircraft must have an operational MILES Bor Manworn Instrumentation Kit (MIK) installed to operate in the maneuver area. These devices provide the NTC with the position location and other required data during the rotation. This requirement may be waived by the Senior Aviation Trainer (E07). All aircraft with the Counter Missile Warning System (CMWS) will ensure it is operational. MILES Coordination Meeting. The unit will coordinate a meeting between the Aviation RTU MILES representative and WTA personnel to outline the schedule for the WTA contractor to install aircraft MILES and instrumentation. The unit will provide the contractor with the priority of installation for each aircraft to facilitate force package build up. All MILES and instrumentation is contractor installed, but the unit has supervisory and accountability responsibility for all equipment. No removal of MILES is authorized by the rotational unit. UH-60 /CH-47 must draw an additional MILES harness for every**

M-240H weapon system in order to pair the weapon with the harness. Installation. Units will sign for the tracking equipment and be responsible to meet prearranged installation and de-installation appointments with the civilian contractor. Scheduled conflicts will be resolved by the Senior Aviation Trainer. MILES Bs will not be taken off Fort Irwin/NTC without the approval of the Senior Aviation Trainer. If an aircraft must leave the reservation, the unit must coordinate with the Senior Aviation Trainer so that arrangements can be made for removal and/or reinstallation of the MILES B. The MILES B will be deactivated prior to departing the NTC reservation.

3. **Apache and Kiowa Warrior MILES AGES II Manual Adjudication. Manual Adjudication against COEFOR vehicles during force-on-force operations with the Apache or Kiowa Warrior Helicopters equipped with MILES AGES II only (no shoot capability): Aircraft must have a weapons load supported by current meteorological conditions and IAW a Performance Planning Card (PPC). BLUFOR aircraft will call the covering Eagle OC/T and provide the number of COEFOR vehicles identified and the approximate grid location. The Eagle OC/T provides the Eagle TAFF with the above information. The Eagle TAFF verifies COEFOR vehicles at BLUFOR passed grid and verifies with Blackhorse TAFF. Probability of Kill (PK) is 80% for Hellfire on all vehicles, 75% for Rockets on trucks and unarmored vehicles with 75% mobility kills only for BMP/OSVs. The Eagle TAFF will analyze the engagement and inform the Blackhorse TAFF of the number of vehicles to be black boxed based on PK. Eagle TAFF will then call the covering Eagle OC/T with the adjudicated BDA. The covering Eagle OC/T then provides the BLUFOR aircrew(s) with their BDA. To avoid compromising both BLUFOR and COEFOR positions, Eagle OC/Ts will fly out to COEFOR vehicles to verify BDA only if unable to make contact with the covering ground OC/T.**

9-3 Restrictions

1. **Maneuver Area Boundaries. All aircraft will abide by the maneuver area boundaries and published ACO. Coordinating altitude for rotary wing aircraft and fixed wing aircraft is specified in the ACO and briefed by the Eagle OC/Ts during Aviation unit's RSOI inbrief. Violations will be reported to the Senior Aviation Trainer for disposition.**

2. **OC/T Escort Requirements. In UH and CH aircraft, one seat must be reserved for an Aviation OC/T. The seat must provide access to an ICS cord, a headset, and the MILES controller boxes, with access to all radios. Additionally, the maneuver task force will manifest its OC/Ts. The maneuver task force OC/Ts manifested will include one per rifle platoon, one per specialty platoon, one per company headquarters, and one for the task force command group.**

3. **Rotary Wing Hard Deck. Operations Group Commander approved hard deck for the rotation is specified in the OC/T Aviator inbrief O/A RSOI 1. Any request for exception shall be in MFR format and routed through Eagle 07 for approval prior to execution.**

9-4 Operations

1. **Night Vision Goggle Operations. Aircraft will comply with applicable regulations regarding illumination criteria, etc. For safety reasons, the COEFOR is restricted from firing MGSS or ATWESS ammunition at NVG helicopters closer than 500 meters. In addition, the COEFOR is restricted from using flares and pointing searchlights, either IR or white light, at any helicopter. Aviation OC/Ts will subjectively assess NVG helicopters as a casualty if they fly within 500 meters of COEFOR positions and/or expose themselves to what would have been effective COEFOR fires. COEFOR leaders who feel they have successfully engaged an NVG aircraft will contact the Eagle Team OC/T or TAFF to adjudicate the engagement. In addition, COEFOR leaders can signal the aviation OC/T flying with the targeted aircraft by flashing vehicle lights or white flashlights simulating weapons engaging the helicopter. Upon seeing this signal, the OC/T will make a decision to assess a casualty based on aircraft range and engagement weapon type.**

2. **Assembly Area and Forward Operating Base Operations. All assembly areas on the NTC reservation are to be considered tactical and are considered to be forward of the light line. All**

assembly areas and Forward Operating Bases are subject to enemy actions consistent with COEFOR doctrine and tactics used against such areas. This can include, but is not limited to, enemy CAS, COEFOR armor attacks, FROG/SCUD attacks, NBC attacks, mortar/artillery attacks, raiding parties, etc. Units will be required to conduct tactical moves from one assembly area or FOB to another based on the tactical situation. This includes all rear elements such as ASB. All movements from FOB to FOB during the rotation will be considered tactical movements and are subject to the same EXOP requirements for tactical convoys.

3. **Aircraft and Vehicle Survival Equipment. All aircraft and vehicles will have as a minimum, two quarts of water, one MRE, and one blanket or poncho liner for every person on board. A cold/hot weather survival kit can be used in lieu of the above listed items. One kit will be on board for every two personnel. Attack helicopters and OH-58D aircraft will have one quart of water and a survival vest per crewmember due to space limitations.**

4. **IFF/SIF Requirements. All rotary wing aircraft, including every aircraft in multi-ship formations, will squawk Mode 3 code 4000, at all times while they are conducting flight operations. In addition, all aircraft will install the current "A" / "B" Mode 4 IFF codes. The unit is responsible for bringing this COMSEC on a Simple Key Loader (SKL) from their "home station - Combat Aviation Brigade S6."**

5. **Casualty Play. All aircraft and personnel have one life per Out of Sector mission. All casualties will be assessed IAW Chapter 8 of the EXOP.**

6. **Aircraft Losses. Each aircraft engagement will be subjectively assessed by Eagle 07, or a designated representative, on a case-by-case basis. Casualty and aircraft damage assessment will be relayed through the covering Aviation OC/T to the PC/ PI of the engaged aircraft. Aviation OC/Ts will check MILES operations prior to aircraft departing on missions.**

7. **MILES Kills. When aircraft MILES/AGES system registers a kill code, the aircraft will stop any engagement or movement, assume a safe orbit away from any ongoing operation and notify the covering OC/T. The covering OC/T will verify the kill code to ensure it was a valid engagement and provide guidance on how to proceed. If the engaged aircraft is a UH-60 or CH-47 that is part of a formation flight, the aircraft will continue on until it arrives at the next intended landing point unless otherwise directed by an OC/T. The OC/T will pass instructions to the aircrew for landing or recovery and any permissible radio and/or electronic notifications. The crew will then take actions IAW OC/T guidance. Aircraft assessed as damaged flyable may self recover, but must consider the damage to the aircraft and the injuries to personnel.**

8. **One aircrew member will stay with the downed aircraft at all times but the remaining aircrew may be recovered by one of the following procedures: For damaged-not repairable or damaged-repairable the aircrew may be directed to escape or evade capture. Eagle 07 will direct this action. One crewmember will remain with the aircraft in order to maintain positive control of sensitive items and equipment. The other crewmembers will remain together as they attempt to evade. An OC/T must be present, before the crew attempts to start evading.**

9. **Aircrews may be extracted by sister aircraft. The injuries of the downed aircrew must be considered when choosing this option. The unit must also demonstrate that they have the appropriate equipment for this method of extraction. The OC/T must observe the downed crew attached to the recovery aircraft before the unit receives credit for this method of extraction. At no time will an aircraft take off with a crewmember secured to the outside of an aircraft.**

10. **A Personnel Recovery (PR) team may recover the aircrew members by any vehicle (aircraft or ground vehicle). The PR team must properly transport the injured crew members to the recovery vehicle according to their injuries. Isolated personnel/crew members will be evacuated as directed by the on-scene OC/T. One crewmember will remain with the aircraft in order to maintain positive control of sensitive items and equipment. If this crewmember was a casualty his or her**

casualty card will be evacuated. If the OC/T directs the crew members to remain with the aircraft and not be evacuated, then the PR team will transport the injured crew members to the recovery vehicle and secure them in the vehicle. Once cleared by the OC/T, only the crewmember's casualty cards will be evacuated. Even though the casualty cards are only evacuated, the recovery vehicle must account for the weight and space required to transport the injured crewmembers. Regardless of method of extraction, injured aircrew members~~,~~ or casualty cards~~,~~ must be extracted in accordance with Chapter 8 of the EXOP and evacuated to the appropriate level of medical care within the allotted time in accordance with their injuries. Aircrew members or their casualty cards not extracted to the appropriate level of care in accordance with their injuries in the allotted time will be assessed as DOW.

11. **Aircraft Recovery (post-MILES kill): The aircraft may be recovered by one of the following methods: Self-Recovery. For damaged-repairable the aircraft can self recover after the appropriate simulated maintenance actions are completed. This requires the unit to conduct a proper battle damage assessment and have the required parts, personnel, and tools available to execute the required maintenance repairs. Air Extraction. For damaged-repairable or damaged-not repairable, the unit may decide to recover the aircraft using an UMARK. For this option, the Downed Aircraft Recovery Team (DART) will rig and simulate hookup and sling operations. The recovery aircraft must be on scene or coordinated for. Ground Recovery. For damaged-repairable or damaged-not repairable, the unit may decide to recover the aircraft utilizing ground recovery assets. The appropriate ground vehicle must be used when executing this means of recovery. The DART must simulate the rigging and loading of the damaged aircraft. The recovery vehicle will then return the simulated aircraft back to the FOB or TAA.The unit may decide to destroy the aircraft in place. The unit must gain the appropriate approval authority to execute this option. Additionally, the unit must demonstrate that they have the appropriate means or conduct the appropriate coordination in order to execute this option. OC/T directed Recovery. Following validation of one of the above procedures by the aviation OC/T on site, the unit may be authorized to recover the aircraft back to the FOB or TAA. Aircraft that are assessed as damaged-not repairable will not be reconstituted until 12-hours after a requisition has been processed. Eagle 07 will approve exceptions to this time constraint on a case-by-case basis.**

12. **Non-MILES Kills. Aircraft declared shot down or destroyed by an aviation OC/T due to CAS attack, artillery impact, ADA radar illumination constituting successful engagement by a SAM or ADA gun, or enemy action will land and execute instructions as dictated by the OC/T. These adjudicated kills will be approved by Eagle 07 before a OC/T directs an aircrew to land an aircraft. Aircraft may also be assessed with maintenance faults by the covering OC/T. When given maintenance faults the aircrews should nationalize the response IAW their aircraft -10 published emergency procedures.**

13. **Out of Sector Kills. Aircraft flying out of the designated boundaries or flying in unauthorized areas will receive a warning. If corrective action is not taken or violation occurs, again the aircraft will be assessed by the aviation OC/T as being damaged-not repairable by friendly or COEFOR fire from adjacent notional units. Again, the aircraft will land and execute instructions as directed by the OC/T.**

9-5 CBRN and Aviation

1. **General. All helicopters, crews, and passengers are susceptible to the effects of chemical agents. Units should employ appropriate MOPP levels, place M9 paper on external portions of the aircraft, conduct CBRN surveys, use the M256 chemical detection kit, and observe the indicators for chemical use by the COEFOR.**

2. **Contamination. Should a helicopter enter a contaminated area, an aviation OC/T will assess casualties based on exposure duration, concentration, characteristics of the agent, and personnel MOPP levels observed.**

3. **Simulation. When combined with the Chemical Protective Mask, the JSLIST provides protection against chemical and biological agents, radioactive fallout particles, and battlefield contaminants. If the Rotational Training Unit (RTU) has not been issued the JSLIST, simulated MOPP suits consisting of the individual's CIF issued "Wet Weather Gear" are authorized. However, simulated alarm devices, decontamination means, etc., are not authorized. All aircrews and passengers will wear the appropriate equipment IAW directed MOPP level in order to be assessed as "protected" against a particular chemical agent. Aircrew members performing flight duties are not required to wear either the JSLIST or simulated suit when performing flight duties. However, for safety reasons, the aircraft pilot-in-command (PC) will remain unmasked, will not wear the CBRN protective gloves and overboots, and may perform his duties from the seat designated in the mission brief. The co-pilot will comply with the appropriate MOPP level in effect. For utility helicopters, the crew chief opposite the PC may remain unmasked to assist in clearing the aircraft. Upon aircraft shutdown, the aircraft PC will have 8-minutes to complete the appropriate MOPP level to be considered "protected." Those aircrew members, who are in an off-duty status for fighter management, even if they are sleeping, are still required to don their protective mask.**

4. **Risk Management. If due to physiological, psychological, or environmental reasons, a crew cannot maintain the appropriate MOPP level, they will remove themselves from the contaminated area or run the risk of being assessed a casualty in the event of a chemical attack. Simulated MOPP is not authorized.**

5. **Non-Flying. When on the ground (not flying), the rotational unit personnel will adhere to the appropriate MOPP level. An aircrew member will only don the protective mask if he or she is inside the sleeping bag and conducting fighter management. If the aircrew member is awake and up, but still conducting fighter management, he or she will then go to the appropriate MOPP level.**

9-6 Aviation Recovery and Reconstitution

1. **Simulated Unit Self-Recovery. In this case, a downed aircraft and crew will take appropriate actions IAW their covering OC/T's instructions. The unit must recover the aircraft for it to go through reconstitution. Upon the crew's return to the Assembly Area or FOB, they will stay with their aircraft and await medical attention. Prior to executing recovery, the unit will affect all appropriate recovery procedures IAW the situation. The pick-up aircraft or vehicle must be capable of accomplishing the recovery (i.e., parts, people, crew, test pilot, etc.). Once all this is accomplished, the downed aircraft and crew will follow the recovery aircraft back to the assembly area or area designated by the unit for recovery. The recovering aircraft must fly the entire route with the recovered aircraft. Repeated trips may be necessary to complete the mission.**

2. **Aircraft, Equipment, and Personnel Reconstitution. All aircraft, equipment, and personnel have one life per brigade/regimental mission. Reconstitution will be accomplished as follows.**

3. **Damaged Aircraft and Equipment. A damaged aircraft or ground equipment item will remain damaged until the appropriate personnel, equipment, and simulated parts have been assembled and the maintenance allocation chart (MAC) of how much time is required to normally affect repairs has elapsed. Damage caused by enemy action is based on either the damage card for ground equipment or the subjective evaluation by the aviation OC/T for aircraft. Simulated repairs will be done at the location of the damaged piece of equipment unless recovery has been affected to a rear support area. While in this "damaged" status, real world maintenance can be performed to include test flights. Units are to execute simulated repair procedures until directed by an aviation OC/T to do otherwise. The requirement for simulating repairs can be waived by the Senior Aviation Trainer (E07).**

4. **Damaged-Not Repairable Aircraft and Equipment. A damaged not repairable aircraft or ground equipment item will remain damaged not repairable after change of mission for the brigade/regiment. The aircraft/equipment will be reconstituted 12 hours after the higher S-4**

receives the appropriate replacement requisitions. While in a damaged not repairable status, aircraft and equipment can have real world maintenance performed to include test flights if necessary. Aircraft and equipment in a "damaged-not repairable" status will not be used to benefit operations (e.g., transport personnel, use of communication equipment, etc.). Any damaged aircraft or equipment cannot be reconstituted unless the RTU has shown they can effectively recover the aircraft or equipment. Additionally, aircraft, and equipment have one life per BATTLE PERIOD.

5. **Personnel Reconstitution. Personnel assessed as casualties will comply with the conditions stated on their individual MILES casualty card unless directed to do otherwise by an aviation OC/T. Personnel will remain in a casualty status until they have been reconstituted at the casualty collection point at the brigade/ regimental support area. Additionally, personnel have one life per BATTLE PERIOD. The unit must submit the appropriate casualty feeder reports and personnel requisition IAW unit SOP to the next higher headquarters in order for the logistic OC/Ts to reconstitute the personnel. The Senior Aviation Trainer may waive the requirement on a case-by-case basis to have casualties go to the casualty collection point and may instead allow them to remain in the units' assembly area. In this case, these casualties will remain in this status until change of mission has been announced for the brigade/ regiment and six hours have elapsed after the appropriate personnel casualty feeder reports and personnel requisition forms have been received at the higher headquarters S-4. While in a casualty status, personnel cannot participate in planning, preparation, or simulated combat operations and are limited to the instructions listed on their MILES casualty card. The Senior Aviation Trainer may, on a case-by-case basis, approve a one-time re-keying of key leaders to ensure training objectives are met. Reconstitution times of aircraft, equipment, and/or personnel do not begin until required actions have been completed (i.e., reports submitted/received at the next higher HQ, all maintenance requirements are identified and fulfilled, evacuation of casualties to the appropriate medical facility, etc.).**

6. **Evacuation of Downed Aircrews~~:~~. Unless otherwise specified by the OC/T, downed aircrew casualties will remain with their aircraft. Their respective casualty cards will be evacuated. The casualty card will be treated as if it were the crewmember.**

9-7 Radio Procedures

1. **Desert Radio. BLUFOR aircraft flight follow with Desert Radio and will include the covering Eagle OC/T aircraft in their flight. Eagle OC/Ts will provide position reporting for BLUFOR aircraft on a case-by-case basis, e.g.~~,~~ during mission profile in areas with limited communication capabilities. COEFOR/Admin aircraft will flight follow with Desert Radio via pre-coordinated discrete frequencies.**

2. **Lost Commo. Aircraft operating without OC/T escort (normally single ship) that experiences lost commo will return along their ingress route until commo with Desert Radio is established or the aircraft arrives back at its point of departure for the mission. Single aircraft operating with OC/T escort that experience lost commo with the OC/T should signal the OC/T, land, and conduct operations IAW OC/T guidance. Flights operating with OC/T escort must maintain communications with their OC/T through at least one aircraft. If commo with the OC/T is lost the flight must land and reestablish commo with the OC/T. DTOC, Eagle TAF, and Desert Radio will monitor and track all aircraft missions.**

9-8 Aircraft Separation

1. **Priority for NTC Airspace conflicts: MEDEVAC (real-world), BLUEFOR, COEFOR and Administrative or non-rotational training.**

2. **Mandatory Procedures: All aircraft will comply with the ACO, ATO, APG, EXOP, NTC Reg 95-1, and current maneuver graphics.**

3. **Proximity. Aircraft will never fly or land within 100 meters of personnel or equipment while conducting interdiction operations. Aircraft shall not fly within 500m of active UAS ROZs without coordination with the ROZ airspace control authority (ACA) and provide a 500ft vertical buffer when overflying UAS ROZs. Aircraft may enter active ROZs if they have positive communication and coordination with the ROZ's ACA. RW aircraft and UAS shall maintain 500m lateral separation within the ROZ. For other types of ROZs (fire, PR, etc), the positive communication and deconfliction requirement with the ACA remains or the aircraft will remain outside the ROZ. For artillery ROZs, aircraft must remain a minimum of 100m from the gun target line and the indirect fire gun.**

4. **Aircraft Separation: Aircraft separation will be IAW Annex O of the 52ID OPORD. BLUEFOR/COEFOR Helicopters will maintain a minimum of 1,500m separation when conducting operations. Administrative / non-participating aircraft should maintain enroute altitudes of 1000ft AGL or above, coordinating altitude permitting, to avoid the preponderance of rotational unit and OC/T traffic.**

9-9 Aircraft Lighting Requirements

1. **Minimum lighting in the tactical maneuver area is as follows:. (Units must adhere to conditions contained in the NTC APG): AH-64: Position Lights – Dim, OH-58D: NVG Position Lights – Position Three UH-60: IR Position Lights – Dim, CH-47: NVG Position Lights – Position Three, LUH-72: Position Lights – ON, – Anti-Collision – ON, Other aircraft not specifically addressed: Aircraft lighting configurations approved on a case-by-case basis.**

2. **Units are encouraged to utilize IR Anti-Collision Lights and IR Position Lights, if installed, to mitigate accidental risks.**

3. **Due to RESET, PRESET, and Theater SBE requirements, variations in aircraft lighting configurations exist; therefore, units are required to brief their aircraft lighting plan during the unit in brief. E07 is the approval authority. Units will address aircraft lighting in their SOPs, mission orders, or CRM Worksheets and aircrew briefs.**

4. **IAW AR 95-1 and NTC APG, commanders may authorize exemptions to lighting requirements in threat environments or for NVD flights. Since NTC simulates a threat or combat environment, commanders may authorize exemptions as long as paragraph 3 above is followed.**

5. **Blackout Operation is defined as flight with no visible or IR/NVG light. Requests for blackout operations must be received by the 52ID TOC NLT 24 hours prior to execution. Eagle 07 is the approval authority.**

6. **JVB/VIP Aircraft and Real World MEDEVAC aircraft operate under full lighting.**

7. **Shadow UAS minimum lighting. Shadows may operate in the BDE AO in approved ACMs or within active R-2502 North and East with IR position and / or IR anti-collision light (strobe) on and visible lighting off between official sunset and sunrise when flying above the CA. If not modified for IR lighting, minimum lighting is position lights on and anti-collision light (strobe) off when flying above the CA. Between sunrise and sunset Shadows will operate with visible (non-IR) anti-collision light (strobe) on while flying above the CA. Shadows shall maintain visible (non-IR) position lighting and strobe on at all times while flying in R-2502 airspace below the CA.**

9-10 Personnel Recovery:

1. **PR STX (Individual & Company) Rotational units (RTU) will operate under the control of the following agencies with respect to all PR Training: The Aviation Combat Trainers (Eagles), the 52ID TOC and Combat Trainers (All participating Operations Group Teams). All PR STX Training will be coordinated for through the normal planning procedures for NTC Rotations. The decision**

to execute PR Training during rotation resides with both the Commander of Operations Group (COG) and the Commanding General (CG) of the NTC whether it is a pre-planned scenario or a target of opportunity isolated/missing/detained/captured (IMDC) event to trigger the activation of the RTU's PR CONOP.

2. **Aviation OC/Ts. The Aviation OC/Ts (Eagle Team) are the proponent for PR Training for Operations Group and will ensure the following: Team PR OC/Ts are experienced and trained in Joint & Army PR Operations, High Risk of Isolation (HRI) and Survival, Resistance, Evasion & Escape (SERE) Tactics, Techniques & Procedures (TTPs) from the Division to individual Soldier Levels. Compliance with the Division OPORD with respect to Annex E (OO), Appendix 2 (Personnel Recovery) for all NTC Rotations. The tactical and administrative coordination is made for all planning, preparation and execution of all PR STX training during each rotation, to include, but not limited to the following: Individual PR STX, Company PR STX, BCT PR Rehearsal STX, Immediate BCT PR Operations, Deliberate BCT PR Operations (OOS). Annual reviews of all Operations Group PR Training is conducted IOT ensure the most current PR Training is provided to the RTU.**

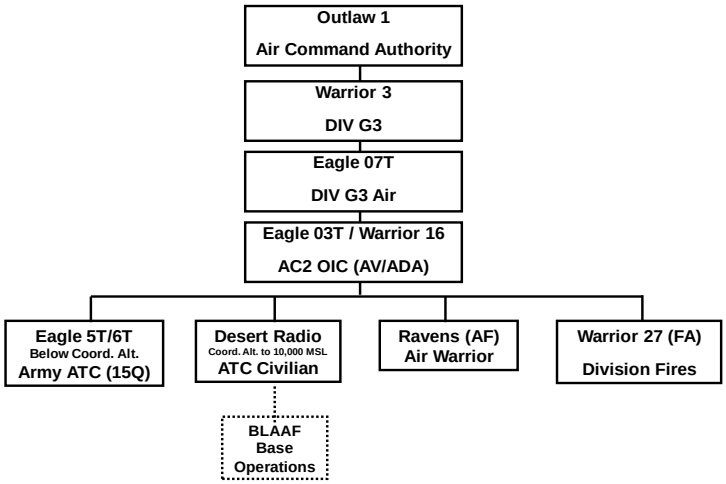
3. **52nd ID TOC. The 52nd ID TOC monitors and tracks all PR STX training to the same standard as all other STX lanes during a NTC Rotation. The 52nd ID TOC also serves as the tasking authority for all PR Operations to be conducted during rotations. Additionally, when a PR Event is reported by the RTU, the 52nd ID TOC will simulate the activation of the Division's Personnel Recovery Coordination Center (PRCC), led by the Division G3 Air (Eagle 7T). This PRCC is responsible for the coordination of assets within the Division's Area of Operations, to include, but not limited to Division PR Assets (e.g. Pathfinder unit, Aerial Reaction Force (ARF), Focused Targeting Force (FTF), etc) as well as assets available through the Joint Personnel Recovery Coordination Center. OC/Ts. RTU personnel will not participate in PR Training without a OC/T present. All OC/Tswill ensure that those participants, to include role players, comply with the COG and CG's scenario guidance IOT prevent disputes between RTU and COEFOR during PR Training events and ensure the PR Event meets the BCT's PR Training Objectives.**

9-11 Airspace Control

1. **General. The purpose of 52ID Airspace Control is to help facilitate the most efficient use of the NTC and RTU airspace through proper coordination and timely responses to airspace coordination measure requests (ACMRs), planned and immediate, fire requests, and CAS cleared below the coordinating altitude. Safe airspace use is the primary mission. The coaching focus for Airspace Control is to lead the BAE into managing their airspace effectively. If airspace management and coordination at the brigade level is executed properly, Airspace Control should only serve as a quality control function of the Brigade's requests and disapprove ACMRs for administrative aircraft moves and/or possible conflict with COEFOR air requirements. ACO and Airspace Control graphics will be posted every day of the rotation on the Eagle Team AKO website. Airspace Control ACO graphics shall not be given to the RTU without E7, E3, or E7T specific concurrence. RTU graphics shall be pushed out via TAIS and also posted on the Warrior SIPR Portal under the "G3 Air" tab.**

2. **Agencies. There are two primary agencies for managing Airspace Control at the National Training Center: Operations Group Airspace Control Cell. This cell is situated in Building 990 (DTOC floor). Eagle 03T, the Operations Group Airspace Control OIC, and Warrior 16 are the primary facilitators of information and coordination within the cell and among the rest of the DTOC. The Airspace Control cell consists of two Air Traffic Control NCOs (15Qs), Raven Team representatives, Warrior 27, and Air Traffic Services (ATS). See Organizational Chart:**

OPERATIONS GROUP AIRSPACE CONTROL CELL



3. **Desert Radio. Desert Radio, located at Bicycle Lake Army Airfield (BLAAF), is the flight following agency for all aircraft operating in R2502N, R2502E, and R2502A.**

4. **Duties and Responsibilities (OC/T Responsibilities).**

5. **Outlaw 1: Rotational Air Command Authority (in effect: 0001 RSO1 04 – 2359 TD14, or until the training area is handed back to Range Operations.**

6. **Warrior 3: Senior Operations Officer (52ID DIV G3). Responsible for receiving Orange 3 reports in case of ROZ violation or unauthorized UAS launch. Responsible for setting priority of airspace of between rotary, fixed wing, UAS, and fires, and between BLUFOR and COEFOR during rotations.**

7. **Eagle 07T: Senior Aviation Analyst (52nd ID DIV G3 Air). Primary advisor to the Senior Aviation Trainer (Eagle 07). Replicates all functions of the Division G3 Air. Eagle 07T supervises as Eagle 07's designated representative for Airspace Command and Control operations below the coordinating altitude on the NTC. Eagle 07T works closely with Warrior 3 to set priorities of airspace deconfliction during RSOI. Also provides an operational link to the Raven Team, who controls USAF assets and airspace above the coordinating altitude. Contact at SIPR VOIP 563-0230 and NIPR VOIP 380-4818.**

8. **Eagle 03T: 52ID Airspace Control OIC. Senior Airspace Manager. Responsible for airspace management of rotational airspace of both live and virtual assets. Coaching / mentoring of rotational ADAM/BAE in airspace management. Approving authority of all ACMs. Advisor to Warrior 03 and 52ID DCG in all airspace matters. Responsible for coordinating routing of all non-rotational aircraft and any aircraft needing to fly into the live fire area. First action upon assuming shift is to call Range Control and the Zulu TAC to confirm what ROZs and ranges are currently active, the time and location of any ROZs scheduled to be active during the shift, and any other applicable information that will affect Airspace Control procedures. Once the shift officer confers with the Zulu TAC which ROZs are affecting his or her shift, Eagle 5T and/or 6T will ensure these ROZs are populated on the TAIS and NTC-IS. Contact at SIPR VOIP 563-0238 and NIPR VOIP 380-4324.**

9. **Warrior 16: 52ID ADA Officer. Same responsibilities as E03T in addition to serving as 52ID Chief of AMD Operations.**

10. **Eagle 04T: 52ID Airspace Control NCOIC. 15P assigned to Airspace Control cell assisting in airspace management/deconfliction. Responsible for ACO and ATO development and dissemination to the RTU via SIPR Warrior Portal and TAIS. Provide flight OC/Ts with 2-D Airspace Control graphics via NIPR Eagle Sharepoint. Required to conduct Airspace Control briefs to BAE, SUAS and TUAS operators and OC/Ts during RSOI week. Assumes responsibilities of Eagle 03T in their absence. Contact via SIPR VOIP 563-0210/0239 and NIPR VOIP 380-4324.**

11. **Eagle 5T/6T: 52ID Airspace Control and ATS OC/T. 15Q assigned to Airspace Control cell assisting in airspace management/ deconfliction with Air Traffic Control facilities and Zulu TAC. Required to conduct Airspace Control briefs to BAE, SUAS, and TUAS operators and OC/Ts during RSOI week. Contact at SIPR VOIP 563-0210/0239 and NIPR VOIP 380-0481/4324.**

12. **Warrior 27: Senior FSO. Responsible for quality control of fires procedures, live and virtual.**

13. **Zulu TAC: Airspace management/deconfliction facility. Responsible for providing traffic advisories and restricted area status to aircraft operating north of PL Dragon. During live fire exercises (LFX), Zulu Tac personnel will contact Airspace Control via phone (380-4324) or RCS (channel 124) upon receiving requests for PL Dragon activation and altitude extension authorizations for relay to DESRAD. Manning provided by Eagle 5T, 6T and/or guest augmentee. Contact at NIPR VOIP 380-1975. Zulu TAC is NOT the Airspace Control Authority (ACA) and can only clear aircraft/personnel north of PL Dragon in addition to providing routing guidance. Aircraft must contact the ACA prior to entering any active airspace. Additionally, aircrews are still responsible for contacting Desert Radio every 30 minutes or when departing their last location for position updates.**

14. **EAGLE Flight OC/T÷ . Eagle OC/Ts are required to notify Desert Radio upon departure of Bike Lake and completion of mission. The OC/T will also notify Eagle TAFF (Eagle Tango) upon departure.**

15. **Airspace Usage. The RTU will conduct air operations IAW the following guidelines: Request airspace control measures (ACM) through DIV Airspace Control NLT 1200 the day prior to mission execution (for example UAS/fires ROZs, ROZ ISO air assault mission, etc.). BPT receive and distribute current ACO published with approved ACMRs by DIV Airspace Control via Warrior Portal NLT 1800L the day prior to execution. The unit will notify Desert Radio immediately of all accidents or incidents to include precautionary landings. The unit must call Desert Radio upon completion of operations and to deactivate the ROZ. If there is no activity scheduled in the ROZ for more than two hours, the unit must call Desert Radio and deactivate the ROZ. USAF weather can be contacted per the NTC APG to obtain the latest weather information.**

16. **Coordination. The altitudes for the four major airspace users during a rotation are: UAS (Surface to 20,000 MSL), Rotary Wing (500' below the coordinating altitude / coordination level), Fixed Wing (Above the coordinating altitude / coordination level), Fires (Surface to Max Ord).**

17. **Below the coordinating altitude. All aircraft will flight follow with Desert Radio and be controlled by the units' ALO. Prior to entering airspace below coordinating altitude, the BAE must notify Airspace Control of the maneuver area via Global Area Reference System (GARS).**

18. **NTC Airspace Users.**

    a. **UAS. RTU will conduct UAS operations IAW the following guidelines: Refer to EXOP Chapter 2-3 for details and guidelines on UAS operation and adjudication and RTU must follow following guidelines for approval to launch UAS and gain entry into 52ID airspace. UAS operations are not authorized unless ACMs are submitted to Division for approval. UAS operators must maintain direct communication with Desert Radio via FM 61.20 in the**

clear. Unit must notify 52ID Airspace Control 5 minutes prior to UAS launch and request launch code. Airspace Control will confirm the launch code with the OC/T on site. Once confirmed, Airspace Control will notify DESRAD that the ROZ is active and will notify BAE on ROZ status. The unit must maintain positive communications with Desert Radio and provide position reports to Desert Radio every 15 minutes providing a 6-digit grid, or at the discretion of Desert Radio during UAS operations. If communication between the UAS operator and Desert Radio is lost, the unit shall immediately report to the OC/T lost comms status. The OC/T will report to Airspace Control who will coordinate landing site of UAS. Airspace Control will relay to OC/T the approved landing area and continue to provide DESRAD with updates until UAS is recovered. The UAS will discontinue flight activities until communications are reestablished. UAS operators shall yield right-of-way to all other air vehicles regardless of type. The UAS shall be landed if any other air vehicle's safety is in jeopardy. UAS Operators will receive a briefing from Desert Radio at Building 6212, Bike Lake Army Airfield, NLT RSOI 4 and sign a Letter of Agreement prior to UAS usage. IAW 95-23, UAS operators are required to obtain a weather briefing for their mission.

b. Small UAS (Raven, Silverfox). SUAS is characterized by use in "close-range" (less than 25 kilometers). Units will conduct UAS operations IAW the following guidelines: SUAS Operators will receive a briefing from DIV Airspace Control on RSOI 1 at the OCA Raven Building. Unit must notify DIV Airspace Control 20-minutes prior to UAS launch and request activation of the applicable ACMs along with the applicable channel/locator. Unit must notify 52ID Airspace Control 5-mins prior to UAS launch and request launch code. Airspace Control will confirm the launch code with the OC/T on site. Once confirmed, Airspace Control will notify DESRAD that the ROZ is active and will notify BAE on ROZ status. Tactical UAS (Shadow, Predator). TUAS is characterized by use in "medium-range" (less than 125-kilometers) and "extended-range" (200-kilometers or more). Units will conduct UAS operations IAW the following guidelines: TUAS Operators will receive a briefing from DIV Airspace Control on RSOI 1 at the RUBA briefing room T9011. Unit must notify DIV Airspace Control 30-minutes prior to UAS launch and request activation of the applicable ACMs along with the applicable launch code. TUAS Operators must contact Desert Radio 30-minutes prior to desired launch time to establish communications check, request 30-minutes prior to launch and relay the approval launch code specifically assigned to their missions. Airspace Control will confirm with the OC/T on site at operating ROZ and the parameters of their mission. DESRAD will provide the UAS operators an updated briefing of weather and any applicable restrictions. Further guidance on UAS operations can be found in Chapter 2.

c. Rotary Wing. Below the coordinating altitude/coordination level. All rotary-wing airframes are required to fly with a minimum of a paper hard copy of the current ACO Graphics. Those rotary-wing airframes with digital cockpits have the additional requirement of flying with a digital copy of the current ACO Graphics on the cockpit display. It is the Pilot-in-Command (PC) responsibility to obtain a list of current ROZs prior to take-off. IAW the NTC APG frequencies, aircrews will contact Desert for flight following, notice of other aircraft in route of flight, and current active ROZ status: Prior to crossing PL Dragoncrews are required to contact ZULU TAC for clearance to enter live fire area. OC/Ts also have the ability to contact Zulu TAC for clearance via their internal communications system and Rotary Wing aircraft will maintain positive communications with Desert Radio for flight following while north of PL Dragon.

d. Fixed Wing. All Air Force aircraft must submit a PPR either as part of Green Flag Operations or as a separate flight request. PPRs are processed by Bicycle Lake Ops. The Raven Team/Air Force element will initially contact Desert Radio to request the airspace altitude in R2502 East to be raised from coordinating altitude to desired flight level at least 15 minutes prior to usage.

e. Fires. Warrior 27 is the FSCOORD to 52ID and will be POC for any planned fires requests. Immediate fire requests will originate from the supported unit to BCT, BCT to BAE, and BAE to 52ID for airspace deconfliction and approval. A 1km ROZ will be created at gun location and a 1km box along the round trajectory to realistically inhibit aircraft movement during fire missions.

19. Deconfliction. Aircraft deconfliction procedures in the Airspace Control cell:

a. Outlaw 01 will set the priority of airspace users NLT RSOI 4. Daily operations and approvals will be controlled by Eagle 3T and W16. Disapprovals of ACMRs will only occur when the request forms are filled out incorrectly~~,~~ ; or the BCT has failed to deconflict their airspace properly. During rotations, Warrior 3 retains the authority to override previously set airspace use priorities to facilitate maximum training for the RTU.

b. Deconfliction of multiple users in the BCT AO will be completed at the Brigade level and reported up to 52ID Airspace Control. As such, the RTU must maintain communication with all users either through their subordinate units or directly. The BAE will routinely be required to report status of all airspace users and locations to Airspace Control.

Chapter 10
Civil Military Operations

CHAPTER 10 – Civil Military Operations:

10-1 General

1. **Overview. BLUFOR can expect to interact with a number of different types of personnel (role-players) on the operational environement. NTC replicates both combatants and non-combatants, including enemy military personnel, insurgents, criminals and criminal organizations, civilians, contractors, refugees, representatives of local law enforcement, representatives of intelligence organizations, governmental leadership, etc. These personnel may be advocates of the US forces or may oppose them. Actions taken by the BLUFOR will influence civilians to be supportive, neutral, or hostile towards US forces. U.S. Soldiers or contractors replicate these roles. This chapter describes the operating procedures that govern BLUFOR interaction with these personnel, including detention and search procedures. These procedures do not govern interaction with actual representatives of the media or official visitors.**

2. **MILES Directive. All roles, combatant and non-combatant, in the maneuver area are subject to the full range of battlefield effects (including, but not limited to: direct and indirect fire, IEDs, grenades, mines, and CBRN effects). All role-players will wear the MILES body harness at all times.**

3. **Vehicle MILES Exceptions. Not all vehicles associated with role-players, particularly some media vehicles, have MILES. Role-player vehicles without instrumentation remain subject to battlefield effects (as determined by the OC/T). The occupants within the vehicle will be wearing, at a minimum, the MILES body harness. Any effects on the personal MILES will occur against the vehicle as well.**

4. **MILES Casualty Cards. All role-players must carry a MILES casualty card, and will perform in accordance with the casualty card if adjudicated.**

5. **Role Player Casualties. If a role-player's MILES harness activates, the rotational unit must handle the person IAW his/her MILES casualty card. Any role-player or vehicle with MILES not-to-standard will become a casualty if engaged in any manner (to include mines or IEDs). Civilian casualties must be treated IAW 52ID directives.**

6. **Exceptions. Although all role-players are required to wear MILES gear, some NTC support personnel do not wear MILES. If an individual without MILES attempts to play a role related to the tactical scenario, report such activity to the nearest OC/T.**

7. **Contractor Vehicles. All Contractor vehicles that are not part of role-play will obtain a decal at the IP checkpoint prior to entering the training area. All contractors whether a role player or not must pass through BLUFOR Traffic Control Points. OC/Ts who witness a contractor attempting to bypass a TCP will stop the contractor vehicle and re-direct them through the TCP.**

8. **Uniforms, Clothing, and Equipment. All personnel, combatant and non-combatant, in the maneuver area will wear uniforms or clothing appropriate for their position, rank, and role. Specific information regarding uniforms and clothing in the area of operations is in the Division OPORD or through Requests for Information (RFIs).**

9. **Soldiers as Civilians on the Battlefield. Soldiers replicating civilians on the battlefield (COBs) may wear or use certain elements of their military issue clothing, so long as those items do not combine to present the appearance of a military uniform. Commonly worn items include issued boots, socks, headgear, undershirts, and gloves. Other commonly used military items include ponchos, poncho liners, sleeping bags, and duffel bags. The presence of these items does not necessarily indicate a connection to enemy military, insurgent, or terrorist organizations.**

10. **Paramilitary Organizations. Members of paramilitary organizations (insurgents, terrorists, etc.) do not wear specific uniforms to identify themselves unless their own organization (as described in orders or intelligence summaries from 52ID) requires it.**

11. **Communication Systems. Some civilians and vehicles have radios, both military and civilian models. These radios replicate other means of communications (cell phones, CBs, police radios, etc.), and are not indicators of enemy military, insurgent, or terrorist organizations.**

12. **Night Vision Devices. Some civilians and vehicles have military issue NVDs and PLGRs. These devices are for safety purposes, and do not serve as indicators of enemy military, insurgent, or terrorist organizations.**

13. **Identification Cards. Most civilians carry identification cards in accordance with local laws and regulations; however, the lack of official identification does not necessarily indicate a connection to enemy military, insurgent, or terrorist organizations.**

14. **Confiscating Equipment. RTU Soldiers will not confiscate or capture equipment without OC/T approval.**

15. **Building Props: All buildings in the training area have props (furniture, pictures etc.). BLUFOR will not remove any props to use within their facilities. All Furniture props will remain in current buildings. BLUFOR personnel will not kick over or destroy any props when conducting clearing operations.**

16. **PARSONS Employees. PARSONS civilian managers are as OC/T equivalents. Their vehicles have Civilian contractor markings (i.e. PARSONS sign) and/or will have proper ID identifying them as PARSONS managers.**

10-2 Media Events

1. **Media Events. Media events provide soldiers and leaders a realistic encounter with Embedded, Unilateral, Accredited, Unaccredited, Unregistered, Escorted, and Unescorted media.**

2. **Media Interaction Restrictions. The media will only interact with personnel participating in an NTC rotation (i.e., rotational soldiers wearing MILES equipment). Media role players will not interact with general officers, unless specifically authorized by the NTC CMDR.**

3. **Questioning by the Media. The person role-playing a media representative may ask questions that are far ranging and may not be immediately relevant to the rotation. Role players will not ask questions of soldiers or leaders that are of a degrading, racial, ethnic, or sexual nature in order to provoke a negative or emotional response. It is the media role-player's responsibility to discuss the range and nature of his questions with the escorting OC/T prior to executing the event.**

4. **Media Embedding. Real world media also embeds with units. Remember, you and your soldiers are representing the U.S. Army when you speak with them. All comments – even in the chow line – are on the record.**

5. **Radio Stations. There are five radio stations in select towns that can broadcast into the maneuver area. The stations' operational status and capabilities varies based on the rotational design.**

10-3 Dislocated Civilians

1. **Handling. Dislocated civilians will be handled IAW directives from 52ID Annex K (CMO Annex IAW FM 5-0) to 52ID OPORD and the rotational unit's SOP.**

10-4 Live Animals

1. **General. Live animals are on the battlefield. Some of the animals are residents of the Mojave Desert (burros, coyotes), some are property of neighboring residents (primarily cattle), and other animals (primarily horses) actively support the COEFOR and/or COB rotational operations.**

2. **BLUFOR Restrictions. BLUFOR soldiers will maintain a safety perimeter of 10 meters for any live animal. No one, to include the animal rider, may use weapons or pyro within 100 meters of any live animal. No soldiers will throw anything at any animal. BLUFOR soldiers will never attempt to ride a horse or other live animals.**

3. **Rotary Wing Aircraft. Horses and other animals will remain at least 500m away from rotary wing aircraft in order to prevent possible injury to the animal and rider. Rotary wing aircraft should make every effort to maintain a 500m slant range from observed live animals along their route of flight.**

4. **MILES. Horses have no MILES and are not subject to kinetic engagements. BLUFOR will never touch, search, or remove equipment from a horse. The horse-handler will take commands from BLUFOR to move the horse as directed.**

5. **Horse Riders. The rotational unit may detain animal riders if appropriate. Once BLUFOR approaches within 20m of an animal and rider and possess the requisite force to stop and detain a rider, the rider will follow all commands from the OC/T in charge. If there is no OC/T, then the rider will obey commands of the BLUFOR soldier in charge. If the rotational unit detains the rider, an authorized handler, usually co-located, assumes control of the horse.**

10-5 Civilians on the Battlefield (COB)

1. **General. Detailed instructions and operating procedures on COB events and handling of detainees are in Chapter 2 under Tactical Questioning and Interrogation, and Chapter 3 under Detention and Searches.**

10-6 Money as a Weapon System (MAAWS)

1. **Conversion Rates. At NTC, the conversion rate from U.S. dollars to host nation currency is $1 = 10 host nation units (e.g. Atropian Dollars)**

2. **Funds Management. Pay Agents and PPOs. Pay Agents and Project Purchasing Officers will be in at least the grade of E-6 and appointed by an O-6 Commander, with appointment in memorandum format.**

3. **Payment Records. All payments will be recorded on SF 44 IAW established Army Regulations governing PPO and Pay Agent procedures. There are no special procedures or exceptions to this established Army policy.**

4. **Unit Requirements. Units must keep detailed records and receipts and return all unused funds at the end of their operations; there will be an audit.**

5. **Specific Guidance. 52ID OPORDs and the 52ID TACSOP cover specific rules on types of funds, usage, authorized amounts, approvals, and specific procedures.**

Chapter 11
CBRN

CHAPTER 11 - CBRN OPERATIONS:

11-1 Chemical, Biological, Radiological and Nuclear (CBRN)

1. **Units are given credit for using their organizational CBRN equipment if the items are present, operational, and employed in a doctrinally correct manner. All units are credited with two sets of JSLIST (one training set from home station, one paper). Suit failures will be assessed 24 hours after contamination at a rate of 50% per hour. Substitutions are not allowed (example: duct tape for M9 paper or leather boots for GVOs).**

2. **CS or yellow smoke is used to initiate CBRN attacks and to simulate CBRN agents; however the absence of CS on the battlefield does not always indicate absence of a chemical agent. OC/Ts may give visual signals (hand/arm, marking of M8/M9 paper), audio (M42 alarm), or CBRN casualty cards.**

3. **CBRN NCOs/CHEMOs at battalion and brigade level will be evaluated by a CBRN OC/T. Specialty Platoons such as RECON, TIC/TIM and Biological Integrated Detection Platoons will be evaluated by a CBRN OC/T with the appropriate ASI when possible.**

11-2 CBRN Agents

1. **BLUFOR units do not have release authority to employ CBRN agents. COEFOR has the capability to employ a spectrum of traditional persistent and non-persistent chemical warfare agents. COEFOR also has the capability of employing radiological or biological agent delivery systems include artillery, rockets, aircraft bombs, sprays, and improvised dispersal devices. The effects from CBRN agents affect both BLUFOR and COEFOR units.**

11-3 Chemical Agent Attacks

1. **Replication. CBRN OC/Ts will assess all CBRN strikes. For indirect chemical fires, air burst/ground burst artillery simulators and CS grenades will be used to indicate the incoming CBRN rounds. Improvised chemical or radiological dispersal devices (CDD/RDD) can also be employed by COEFOR. OC/Ts will provide information concerning color changes on chemical detector paper (M8/M9) or M42 alarm, as appropriate.**

2. **Assessments. During chemical agent attacks personnel equipped with the MIK harness are assessed by the NTC AWES system. Personnel not equipped with the MIK harness are assessed as follows:**

3. **Units and personnel in the attack area of persistent or non-persistent agents who do not respond to individual cues will be assessed as casualties. OC/Ts will issue a casualty card to simulate personnel in the downwind hazard area. If Soldiers do not take appropriate actions to warn others,**

additional casualty cards will be issued. Individuals will be allowed to continue their mission once the proper level of protective posture has been attained.

4. **There Are Six Categories of CBRN Casualties: Return to Duty (CBRN RTD), Walking Wounded (CBRNWW), Litter (CBRNL), Litter Urgent (CBRN LU), Killed in Action (CBRN KIA), and Died of Wounds (CBRN DOW). OC/Ts will issue CBRN casualty card(s) as appropriate. Individuals not taking proper protective measures will be assessed as a CBRN casualty.**

5. **Conventional casualties who subsequently become contaminated, or contaminated soldiers who subsequently become conventional casualties, will have their MILES casualty cards placed in effect. further information.**

6. **OC/Ts may assess CBRN casualties based on protective equipment failures and shortages while in presence of a chemical agent.**

7. **When CBRN agent poisoning is observed, the individual or his buddy must initiate the correct first aid procedures. Each Soldier should be issued a MK-1 trainer and one MK-1 nerve agent antidote (NAAK) card if available. Credit for three simulated MK-1 kits will be given by the OC/T on the site. The OC/T will annotate the NAAK card with date/time group and call sign each time the MK-1 is administered correctly.**

8. **Initial contingency stockage of JSLIST is based on two per deployed soldier. The second paper set of CBRN gear is issued to the rotational unit by the unit's S-4 prior to departure from the LSA Warrior. The rotational unit must requisition replacement sets of simulated MOPP gear, such as wet weather gear as required. Transportation and distribution of these items will be accomplished by unit SOP. Weight and cube of these items must be considered when they are transported.**

9. **Simulated CBRN equipment/supplies/medical items will be issued through the BSA IAW requisitions submitted by the unit. CBRN equipment is only issued after the appropriate supply requests have been submitted and sufficient transportation is available to move the supplies. Individual/unit reconstitution is only complete once the replacement set of contingency CBRN equipment is distributed to the individual users. Donning the JSLIST regardless of the time worn equates to a day of wear.**

10. **If resupply of MOPP gear is not accomplished, the unit is in an unprotected posture. If a unit is subsequently contaminated and does not conduct thorough Decon or conduct a MOPP gear exchange, over garments will fail at a rate of 50% per hour after the maximum life span of the over garment (24 for JSLIST).**

11. **The 52ID DTOC will issue a scripted chemical downwind messages (CDM) to appropriate rotational units every six hours throughout the rotation. The source of the CDM comes from the Air Force SWO. The DTOC will also issue messages, as required, concerning CBRN equipment serviceability and medical pretreatment guidance.**

12. **Individuals operating around contaminated vehicles must take the appropriate protective measures or they will be assessed as a CBRN casualty. Personnel within one meter (an arm's length) of a contaminated vehicle without their protective mask on will be assessed and individuals not in MOPP-4 touching a contaminated vehicle will be assessed.**

11-4 Decontamination

1. **Water will simulate Decontaminating Solution No. 2 (DS-2) and talc, flour, or liner's chalk will be used to simulate STB. Units must identify and carry specified containers for bulk decontaminates. As an example, a 5-gallon water can be marked as "DS-2" must be used for refilling ABC-M11 decontaminating apparatuses. When bulk decontaminate is exhausted, resupply is conducted through normal procedures. M17/M26 DAPs may be refilled as resupply actions accomplished.**

2. **Change of mission has no effect on the requirement for decontamination. Contaminated vehicles, equipment and personnel will remain contaminated until proper decontamination procedures are taken. Continued use of contaminated vehicles or equipment is authorized only if the crews assume the proper MOPP level.**

3. **Complete decontamination can be achieved through immediate decontamination within 1 hour of becoming contaminated followed by operational decontamination within 6 hours of becoming contaminated.**

4. **If the unit fails to complete immediate decontamination to standard, then complete decontamination can be achieved only by thorough decontamination or operational decontamination in conjunction with weathering. In this case, operational decontamination plus weathering can be done instead of thorough decontamination only if started within 6 hours of becoming contaminated. Once operational decontamination is complete, units must be in MOPP IV when operating vehicles until after the weathering time expires.**

Table 11-4 **Weathering After Operational Decon**	
Daily Mean **Surface Air Temperature**	**Duration of Agent**
Less than 97 deg F	**4 hrs / 3 hrs CARC surface**
Greater than 97 deg F	**3 hrs / 2 hrs CARC surface**

11-5 CBRN Reconnaissance and Survey

1. **Reconnaissance or survey missions are not valid unless the unit performing the mission is accompanied by an OC/T. While conducting the recon/survey, the OC/T will provide the necessary cues (i.e., simulate, meter readings, TRAINS tickets, or symptoms) to the Rotational Unit. Marking of contaminated areas should be IAW the Rotational Unit's SOP and doctrine.**

11-6 Special Considerations

1. **Rotational Units will immediately notify the nearest OC/T and their higher headquarters if a JCAD, ICAM, or other detector is damaged. These devices have radioactive sources that are potentially hazardous if the detector cell is damaged. This report will be passed through unit channels to DTOC. DTOC will forward information to the Post Safety officer and Environmental Clean-up Team (ECT). All personnel entering HC smoke will don their protective mask IAW Safety of Use message dated 191615Z JAN 90. Rotational Units will ensure they have no players in the maneuver area with a medical condition (allergy, pregnancy, asthma, etc.) that would put them at risk if exposed to CS or other chemical training agents. OC/Ts will not provide advance warning of chemical agent events.**

11-7 Persistent Agents

1. **The duration of persistent agent effectiveness is 24 hours. Rotational Unit must identify that the agent is non-persistent through employing an appropriate detector system or kit (JCAD, M256, NBCRV, etc). The RTU should not know the agent is persistent until detection has been completed. The rotational unit should not assume that after the published time has expired, the contamination no longer exists. The area must be checked with detection devices to verify the estimates listed in tables. Areas attacked with artillery or bomblets will be considered as one large contaminated area instead of small individual spots of contamination. This one large area is determined by connecting the individual spots at the outermost points of what appears to be the center. CBRN OC/Ts should coach CBRN Staffs to employ JEM, JWARN, FBCB2, or CPOF to craft plumes to communicate predicted contamination areas until confirmation is obtained.**

11-8 Non-Persistent Agents

1. **Duration of non-persistent agent effectiveness is 2 hours.**
2. **Rotational Unit must identify that the agent is non-persistent through employing an appropriate detector system or kit (JCAD, M256, NBCRV, etc). The RTU should not know if the agent is non-persistent until detection has been completed.**

3. **Bronco OC/Ts should coach CBRN Staffs to employ JEM, JWARN, FBCB2, or CPOF to craft plumes and communicate predicted contamination areas to subordinate commanders until confirmation is obtained.**

11-9 Biological Agents

1. **Biological agents are available to the COEFOR. Biological agents affect COBs, COEFOR and BLUFOR soldiers and civilians who come in contact with a biological agent. Personnel infected with biological agents may be contagious (possibly can be transmitted to others by touch or exchange of bodily fluids). BLUFOR has the capability to detect Biological agents through the use of Hand-held assays or through the employment of a BIDS, JBPDS, RAZOR-EX, or JBAIDS system from a CBRNE unit. The RTU should not know if the agent is biological until detection has been completed.**

Chapter 12
Communications

CHAPTER 12 – COMMUNICATIONS:

1. **Overview. The National Training Center operational environment offers Soldiers a challenging and realistic environment for developing leaders and training units. This chapter will cover the science of Mission Command during an NTC rotation. The main areas covered will be the following:**

    a. **Signal Operations: Network Operations, Flight Operations, RTU Training Operations, CI2C.**
    b. **Network: Fiber Optic Network, SIPR NIPR Access Point (SNAP), BFT/FBCB2, line of sight/Point-to-point radios, AN/PSC-15 Global Rapid Response Information Package (GRRIP), Harris Enclosed Network, Network Enterprise Center (NEC).**
    c. **Servers: Jabber.**
    d. **Spectrum: Voice, FM, Cell Phones, Handheld radios, TACSAT, and HF.**
    e. **EWO: COEFOR Electronic Support Measures (ESM) & Electronic Countermeasures (ECM) Effects.**
    f. **COMSEC: Firefly and PPK keys, Compromises.**
    g. **Information Assurance: RTU Requirements, DA IG, Accreditations, 15-6 Investigations.**
    h. **Field Service Representative (FSR) / Logistical Assistrance Representative (LAR): BLAST, i. Digital Systems Engineer (DSE).**

12-1 Mission Command Systems Operations

1. **Network Operations (NETOPS). NETOPS Mission Statement. The 52d ID Network Operations directs the operation, maintenance and defense of the Wide Area Network (WAN) in support of all Joint and Combined entities in the Division's AOR.**

2. **Operational Concept. The 52ID Network Operations Center operates 24x7 beginning RSOI 03 to troubleshoot network outages, assist end users, and enforce network policies to ensure robust end-to-end user connectivity providing data and voice services. When directed, the 52 ID NOC plans, installs and maintains new mission command system requirements and provides near real-time network status reporting to the 52d ID Division staff and supporting units.**

3. **Shift Change. The shift change brief is conducted three times daily at 0700, and 1500, and 2300 hrs. It adheres to the following format as directed by the NETOPS Chief or NCOIC. Significant events: A summary of all outages resolved or unresolved, to include all troubleshooting measures taken, persons notified, and any other pertinent information. Maintenance: Address any hardware or power problems for equipment in the area. Upcoming events: Disseminate information accordingly as well as tasks from the RTU and/or Division. Personnel Input: On order, all personnel will cover any additional actions of significance that occured during the day. FSRs will brief any specific tasks they are working with the rotational unit.**

4. **NETOP OIC/NET Tech: The NETOP OIC/NET Tech will conclude the brief with guidance on what to monitor or assign specific tasks to accomplish.**

5. **Master Station Log: The digital MSL will be maintained by all personnel in NETOPS. It will be updated throughout the day to ensure an accurate recording of events during the shift. A white board will be used to readily show what significant events have taken place. The MSL maintains a listing of: Start and stop time of the event, Location(s) of the event, Equipment affected, Unit(s) affected, Troubleshooting procedures used, Duration of the outage, Notifications made if applicable, a shift summary bullet will be entered prior to shift change summarizing all significant events of the day and include all Daily checks.**

6. **Battle Rhythm. The Battle Rhythm consists of the daily checks and logs.**

    a. **ECU/Generator Checks: As temperatures with the NTC can reach well over 120 degrees it is vital to ensure that equipment is not overheating. Hourly checks will be made during the summer to ensure that equipment is not overheating. When temperatures drop to a consistent 80 degrees or lower the checks shift to every four hours.**

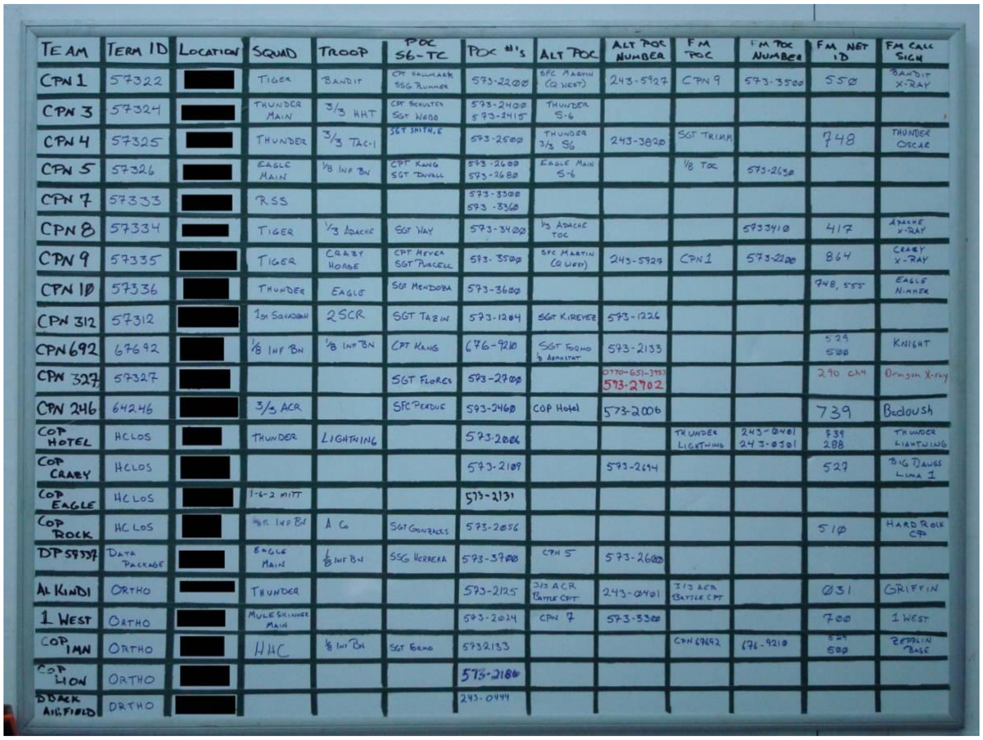
    b. **Fuel Count: Commercial power is normally used when available to power all the equipment. However, maintenance, changeovers, and outages necessitate generator backup.**

    c. **Satellite Transion Trailer (STT) Checks. It is important to keep track of STT statistics in case any of the CPNs track off of the Satellite. Also, keeping track of the receive level can give you an idea of what terminals may need power balancing from the HUB.**

    d. **Line of Sight (LOS Checks). Every 12 hours / once every shift, all of our LOS links transmit / receive power and dBms are checked to ensure they are operating at an optimal level. This prevents the burning up of feed cones due to too an increased power level. This also helps to avoid outages because we are able to catch links that begin to lose power due to antennas being moved by the wind or other factors.**

    e. **Shelter Temperature Checks. Every four hours log all LOS, STT, and JNN shelter temperatures to insure they are getting adequate cooling. By keeping a running log it helps avoid a possible ECU failure or the equipment from overheating due to the high temperatures during the summer months. This will allow us to avoid possible outages by catching failing ECUs early before they become a serious problem.**

    f. **Team Contacts. Continuously keep a running update of all the contact numbers and FM call signs of all our teams. This is very important with helping to contact teams to relay information and trouble shoot links when they are having issues. This greatly helps break down the trouble shooting process by having easy access to all the contact information. (See example below.)**



TEAM	TERM ID	LOCATION	SQUAD	TROOP	POC S6-TC	POC #'s	ALT POC	ALT POC NUMBER	FM POC	FM POC NUMBER	FM NET ID	FM CALL SIGN
CPN 1	57322	[redacted]	TIGER	BANDIT	CPT HALLMARK SSG RUMMER	573-2200	SFC MARTIN (Q WEST)	243-5927	CPN 9	573-3500	550	BANDIT X-RAY
CPN 3	57324	[redacted]	THUNDER MAIN	3/3 HHT	CPT SCHULTES SGT WEBB	573-2400 573-2415	THUNDER S-6					
CPN 4	57325	[redacted]	THUNDER	3/3 TAC-1	SGT SMITH, E	573-2500	THUNDER 3/3 S6	243-3820	SGT TRIMM		748	THUNDER OSCAR
CPN 5	57326	[redacted]	EAGLE MAIN	1/8 INF BN	CPT KANG SGT DUVALL	573-2600 573-2680	EAGLE MAIN S-6		1/8 TOC	573-2630		
CPN 7	57333	[redacted]	RSS			573-3300 573-3360						
CPN 8	57334	[redacted]	TIGER	1/3 APACHE	SGT WAY	573-3400	1/3 APACHE TOC			5733410	417	APACHE X-RAY
CPN 9	57335	[redacted]	TIGER	CRAZY HORSE	CPT MEYER SGT PURCELL	573-3500	SFC MARTIN (Q WEST)	243-5927	CPN 1	573-2200	864	CRAZY X-RAY
CPN 10	57336	[redacted]	THUNDER	EAGLE	SGT MENDOBA	573-3600					748, 555	EAGLE NIMMER
CPN 312	57312	[redacted]	1st SQUADRON	2SCR	SGT TAZIN	573-1204	SGT KIREYEZ	573-1226				
CPN 692	67692	[redacted]	1/8 INF BN	1/8 INF BN	CPT KANG	676-9210	SGT FORMO 1/8 AEROSTAT	573-2133			529 500	KNIGHT
CPN 327	57327	[redacted]			SGT FLORES	573-2700		0770-651-3997 573-2702			290 CH4	Dragon X-ray
CPN 246	64246	[redacted]	3/3 ACR		SFC PERDUE	573-2460	COP Hotel	573-2006			739	Bedoush
COP HOTEL	HCLOS	[redacted]	THUNDER	LIGHTNING		573-2006			THUNDER LIGHTNING	243-0401 243-0501	739 288	THUNDER LIGHTNING
COP CRAZY	HCLOS	[redacted]				573-2109		573-2694			527	BIG DAWGS LIMA 1
COP EAGLE	HCLOS	[redacted]	1-6-2 MITT			573-2131						
COP ROCK	HC LOS	[redacted]	[illegible] INF BN	A Co	SGT GONZALES	573-2056					510	HARD ROCK CP
DP 58337	DATA PACKAGE	[redacted]	EAGLE MAIN	1/8 INF BN	SSG HERRERA	573-3700	CPN 5	573-2600				
AL KINDI	ORTHO	[redacted]	THUNDER			573-2125	3/3 ACR BATTLE CPT	243-0401	3/3 ACR BATTLE CPT		031	GRIFFIN
1 WEST	ORTHO	[redacted]	MULESKINNER MAIN			573-2024	CPN 7	573-3300			700	1 WEST
COP IMN	ORTHO	[redacted]	HHC	1/8 INF BN	SGT BAMO	5732133			CPN 67692	676-9210	529 500	ZEPPLIN BASE
COP LION	ORTHO	[redacted]				573-2186						
DBACK AIRFIELD	ORTHO	[redacted]				243-0444						

g. **Wide Area Network (WAN) and Local Area Network (LAN) To effectively manage, maintain, and troubleshoot the 52d ID WAN and LAN we utilize several different applications including SNMPC, NET MRI, Cirrus Configuration Manager, Net flow Scrutinizer, and various programs from the Engineer Toolset.**

h. **SNMPC. SNMPC is a secured distributed network management system used to monitor both the WAN and LAN. NETOPS monitors links a variety of ways from simple pings to OSPF neighbor relationships. RTUs provide IP addresses to the NETOPS in order to monitor assemblages.**

i. **NET MRI. NetMRI detects and tracks all network changes-including who changed what, where, and when – and saves every historical device configuration. This automated network change and configuration management also includes embedded jobs, scripts, and customizable templates to help you move away from manual CLI-based changes.**

j. **Connection Approval Process (CAP). The RTU must complete all the documentation according to the timelines identified in the CAP reference Annex H in Appendix 2, Tab N.**

7. **Mission Command Validation Exercise (MCVE). RTUs conduct and complete an internal MCVE with their organic and enabler units and 52d ID NETOPS NLT 1700hrs RSOI 3 and submit checklist to 52d ID G6 NETOPS; reference Annex H in Appendix 3, Tab A.**

8. **Mission Command Node Locations. RTU will notify 52ID G6 and 52ID NETOPS prior to movement of any signal mission command assets including but not limited to SNAP terminals, CPN, JNN and RETRANS.**

9. **Requests for Information (RFI). RTU will communicate to 52d ID G6 thru the Operations RFI system. Formats for the RFI can be obtained from 52d ID G3. Direct coordination is authorized after the G6 replies to the RFI through the G3. RFIs will be submitted under the RFI tab located on the Warrior Portal Home Page.**

10. **Flight Operations - Jabber Chat. In order to communicate with Green Flag – West and/or 196 California National Guard ISR assets NIPR Jabber must be utilized. Download Jabber from Defense Connect Online (DCO) and install Jabber software on select NIPR systems as per Annex H in Appendix 5, Tab G. Assign one NIPR computer and at least one ROVER or OSRVT to facilitate communication with 196 RS at the BCT TOC.**

11. **Leader Training Program (LTP). Rotational Units will deploy all their Brigade Command Common Server (BCCS) stacks to the NTC in order to operate their Brigade server stacks and all necessary client work stations and Army Battle Command Systems (ABCS) to create and save all documentation on their file storage or Portal that can be utilized during their rotation.**

12. **Out of Sector Missions. Defined as any mission occurring outside the Fort Irwin reservation. Planning conciderations:**

13. **Means of communications for Movement between Southern California Logistical Airport (SCLA) and NTC: FM Communications via Single Channel Plain Text (SC/PT), Home station cell phones, Iridium Satellite phones from home station or issued from the Vulture Team, FBCB2-(FBCB2-EPLRS will not work due to limited line of sight with the EPLRS towers),**

14. **Primary means of communications to HICON from SCLA: FBCB2, Cell Phone, Iridium, SC TACSAT – if the unit has an approved Satellite Access Authorization (SAA), From the Command Post located in the training area, SIPR, Backup Communications: FM is the primary means of back up communications, POC located at SCLA. Anita Tuckerman, SCLA (760) 243-1911, coordinator of SCLA training areas and cost estimates.**

15. **RSOI. Training for the RTU is primarily discussed during many conferences prior to their arrival at the NTC. Training ranges from CIED, EWO, DCGS-A, CIDNE, and CPOF occurring from D-RSOI 01 through RSOI 04. Training occurs at many different venues around the NTC. Review the current Rotational Unit 52ID Operations Order for times and locations to include: CI2C Equipment, BATS / HIIDES Connectivity, JNN/CPN must utilize static IPs for BATS/HIIDES, SNAP terminals do not utilize static IPs. If the long haul communications device is in the 52d ID mesh then static IPs are not needed, BATS server is located within bldg 990 and is operated by 52 ID, TIGR Connectivity, BCT and SQN/BNs have TIGR servers that sync with themselves and the 52 ID TIGR server, TIGR systems attached to a SNAP terminal utilize the 52d ID TIGR server located at bldg 990, DCGS-A Connectivity, WSS resides at the 52 ID in bldg 990 and DCGS-A boxes connected via fiber are managed by the 52 ID.Typically during any and all rotations, DCGS-A boxes will be connected via organic WIN-T systems and will follow RTU's SOP.**

16. **Ten (10) SNAP terminals are currently available for training use while deployed in the training area only for deploying units. SNAPs reside within the 52 ID mesh. All ten SNAPs are configured with port security (NIPR/SIPR) in order to prevent spillage between the two networks and to ensure all IA steps have been completed prior to connecting to the network. COMSEC for the Taclanes will be the responsibility of 52ID.**

17. **SNAP Training and Issue: Training on SNAP terminals takes place on RSOI 01 in the RUBA at the SNAP/117G trailer, Issue will take place on RSOI 3 at the SNAP trailer in the RUBA, Issuing a SNAP terminal takes at least 45 minutes, Issuing ten SNAP terminals normally takes 2-4 hours. A SNAP terminals consists of: 8 large pelican cases, One two seat HUMMWV will transport one SNAP terminal. The transportation of four SNAPs requires a 5 Ton truck or similar. Units must be prepared to transport all their issued SNAP terminal NLT COB RSOI 03 in order to prepare for the tactical road march and transit cases are a two person lift. SNAP terminal will be issued as an entire set and turned in the same way, inclusive of a TACLANE which requires a current courier card.**

18. **SNAP Turn-in: Turn-in will occur no later than BRD 3 at the issue point starting at 0730hrs; however, turn in is negotiable based on Rotational requirements, SNAPs will be turned in as**

complete sets or with proper documentation of equipment turn-in, SNAPs will be setup and verified during turn-in and SNAPs will be cleaned and inspected at turn-in

12-2 Network

1. **Mobile Video Unit (MVU) Van Fiber. RTU Requirements. The RTU is required to connect and validated fiber connectivity through the MVU NLT 1700hrs TD 01 and remains connected as a redundant link for the remainder of the rotation.**

2. **WIN-T BCT Main CP Fiber Connect to MVU. Configuration in order to connect to MVU fiber is determined by the Lot number of the RTU WIN-T systems. There is a difference between Lot 9 and Lot 10 configurations. Lot 10: fiber connection between the STT and the JNN has a cost of 400. Lot 9 and below: fiber connection between the STT and the JNN has a cost of 0. 52ID NETOPS will direct the costing configurations of the fiber network.**

3. **High-Capacity Line of Sight (HCLOS) and Peer-to-Peer (P2P) Links. Primary Use. 52d ID's primarily use for HCLOS/P2P links is to provide redundancy to either the RTUs JNNs/CPNs using LOS data packages enabling high speed connectivity to JNNs/CPNs for high bandwidth programs like video feeds as well as communications to FOBs/COPs. HCLOS Checks. Every 12 hours / once every shift, all HCLOS links transmit and receive power and dBms are checked to ensure they are operating at an optimal level. This prevents the burning up of feed cones due to too high of a power level. This also helps to avoid outages due to links starting to lose power due to antennas being moved by the wind or other factors.**

4. **Survivable Mobile Anti-Jam Reliable Tactical Terminal (SMART-T). The SMART-T, if manned and provided by the RTU, acts as a direct connection from 52d ID to the RTU ensuring reliable redundant mission command connectivity.**

5. **FBCB2-BFT/ EPLRS. The ESP JCR shop is responsible for the installation and maintenance of the 52 ID FBCB2-BFT/ EPLRS systems. Unit Requirements. EPLRS equipped units will provide Ops Group Vulture Team 200 EPLRS keys for OC/T communications. RTU will provide EPLRS keys to load EPLRS towers for training area coverage. Ops Group will schedule transportation service via 'Ridge Runner' helicopter services NLT than RSOI 2. The RTU must be prepared to load towers with prior coordination of 52d ID NETOPS and the NETOPS Chief. GRE Tunnel. EPLRS equipped RTUs will integrate BFT and JCR platforms through the use of a Generic Routing Encapsulation (GRE) Tunnel from Fort Monmouth, NJ to pull Blue Feed. Request for GRE tunnel is via SIPRNET https://fbcb2-bfthelp.army.smil.mil request. All Unit Role Names (URNs) will be submitted to the BFT Global Network Operations Center prior to RSOI 03. Installation, Operation, and Maintenance. WTA is responsible for the installation, operation, and maintenance of the Division's EPLRS network management system. COMSEC Keys. The RTU provides the COMSEC keys for the EPLRS network. A Soldier from the RTU will fly and drive to various tower locations to load the system. The RTU is responsible for all over the air updates.**

6. **EPLRS Tower Grids.**

EPLRS Site	Grid
ENA-04	NU382985
ENA-16	NU265954
LFA-01	NV377214
LFA-02	NV421247
LFA-04	NV468196
LFA-07	NV556179
LFA-12	NV408321
LFA-24	NV477293

MA-5	**NV262171**
NASA	**NV388036**

7. **AN/PSC-15 Global Rapid Response Information Package (GRRIP).**

8. **COMSEC Key. Vulture Team 30 will sub hand-receipt PPK COMSEC Key via Key Variable Management (KVM) worksheet to the Sidewinder Team during RSOI 2 Team 30 meeting or when mission dictates.**

9. **Upload of COMSEC. Sidewinder Team will be responsible to load the GRRIP systems with COMSEC and conduct all training, setup, and troubleshooting with the GRRIP system.**

10. **GRRIP Computer Restrictions. Computers with the GRRIPs do not have CD drives and thumb drives are not authorized. Units may use an external CD drive for the systems. Computers will be updated prior to being issued to the RTU by Sidewinder Team; however, once the GRRIPs are issued to the RTU the computers will be updated weekly by utilizing a CD uploaded with the latest virus definitions from ARCERT.**

11. **Network Enterprise Center (NEC). NEC Service. In order for the RTU to gain NEC services at NTC the following must be completed. RTU will provide seven day lead-time for any requests requiring NEC services (NIPR, NEC SIPR, VTC, etc). Emergency situations will be handled on a case by case basis.**

12. **RTU will process all NEC requests to NTC Post G6 Future Operations. POC is Eddie Collins at 760-380-1343 or DSN 470-1343 and email eddie.collins1@us.army.mil.**

12-3 Spectrum

1. **Management. Fort Irwin Frequency Management Office (FIFMO) is managed by the Fort Irwin Post G6.**

2. **Frequency Assignments. The FIFMO manages all frequency assignments within the NTC and coordinates directly with all RTUs and all units located on Fort Irwin through the FIFMO's Spectrum XXI account.**

3. **Frequency Plans. Manages the frequency plans for the Land Mobile Radios, Motorola XTS series of radios, RCS radios and frequencies associated with Line of Sight systems.**

4. **Voice Communication. Radio Room/ TOCNET. WTA is responsible for loading the ASIP radios with the current loadset/SOI received from the OPS GRP Vulture 30 team. After WTA has loaded the ASIP radios a cut sheet is developed and posted in the Radio Room and given to the TOCNET FSR. WTA will load all available ASIP radios with the RTUs Freqs / CEOI / loadset; however, will leave the SC PT 52ID nets loaded on a set standard of ASIP radios at all times. The purpose of this is to ensure communications with OCs at any time if the RCS radio system becomes NMC. Loading of the loadset is to take place NLT RSOI 2 to ensure FM communications with the RTU. Cut sheet identifying each ASIP radio by Freq, unit ID and/or if the radio is not being utilized. If COMSEC changeover takes place or a COMSEC compromise takes place and the ASIP radios must move to a different Julian date then WTA will ensure communications with the RTU is kept before and after the COMSEC changeover has occurred.TOCNET. After WTA has loaded the ASIP radios and handed the cut sheet to the TOCNET FSR the FSR will load the TOCNET system.**

5. **RTU will maintain FM communications with Warrior Main (NET 100) during their rotation and conduct an initial FM radio check with WARRIOR Main NLT 1700hrs on RSOI 2.**

6. **Communications- Electronics Operating Instruction (CEOI) . The NTC ECOI will be used as issued by Fort Irwin COMSEC office. The CEOI and only that equipment authorized by theCEOI, SOP, Operations Center, applicable regulations and technical manuals will be used.**

7. **Secure Operation Modes. All FM nets will operate in the secure FH mode (unless otherwise directed by Warrior Main / TAC / or Dragon Live Fire OC/Ts). The Crypto Net Variable (CNV) will be provided by the Vulture Team and will not be changed without the concurrence of the DTOC.**

8. **RTU Additional Requirements. The RTU will provide Plans and Operations Division, Operations Group, information on cross attachments, support units, or other requirements not specifically provided for in the issued CEOI package as notes to the troop list coordinated through FORSCOM NLT 120 days prior to the rotation.**

9. **CEOI Editions & Changeover. Units will will not supersede editions in the event of a compromise, the RTU's COMSEC compromise battle drill will use Julian date changes to mitigate the compromise instead of changing segments. The FM key will not change throughout the rotation.**

10. **Call Signs. Units may use fixed call signs. The unit must provide a list of call signs and expanders to the 52ID G6 by RSOI 02 Units will use CEOI call signs on non-secure nets.**

11. **52ID Call Signs. The RTU will be attached to the 52ID throughout the rotation. Call signs and frequencies for the 52ID are found in the current unit NTC CEOI.**

12. **Pre-Tactical Road March Box Entry Communications Requirements. Any battalion or higher command post deploying to the training area prior to the scheduled tactical road march must maintain communications with Warrior Main (Net 100) via FM radio. The radio must have sufficient batteries for 24 hour operations.**

13. **High Frequency (HF). Division HF database is managed by CPSI. CPSI assigns and deletes frequencies associated with the Radio Section's HF database.**

14. **Cell Phones. Personal cell phones are restricted from use by the BCT in the Box. Personal cell phones in the RUBA should be secured as the unit determines to meet security requirements. The National Training Center has restrictions on the use of government issued cellular phones during rotations. During RSOI and Regeneration government cell phones may be used in the cantonment area for administrative purposes. During rotation only specified individuals in the rotational unit may use a government cell phone for ADMINISTRATIVE purposes. Government cell phones shall not be used for command and control purposes. Specified individuals include: Brigade Commander, Brigade Command Sergeant Major, Brigade Chaplain, Brigade Surgeon, Brigade Contracting Officer, Brigade Safety Officer, Battalion Commanders, Battalion Sergeant Majors and the Environmental Control Team Chief. The Brigade Commander can request an Exception to Policy in writing to the Commander of Operations Group NLT 1700hrs RSOI 03 in order to authorize additional government cell phones based on operational requirements. This request is submitted thru the Operations Group Chief of Communications, Vulture 30. If government cell phones are utilized for mission command purposes in the operational environment, the cell phone will be confiscated.**

15. **Closed Cellular Network (CCN) Management. CCN cell phones are distributed and managed by the 916th Support Brigade. Initial coordination is made through the 916th office at 760-380-5347. Unit will pick up on RSOI 01 at 0900hrs with signature card and assumption of command orders. CCN towers become active on Friday RSOI 05. 11th ACR is responsible for tower power generation and feul sustainment. The CCN is manged by the NTC G6. Jamming and/or shutting down of CCN towers will be conducted as follows: The Operations Group EWO will contact either Vulture 30/30A with the tower affected then the Vulture Rep will contact Post G6 CCN Operator and the 11th ACR Signal Officer. IOT restore theCCN Tower the same process will take place.**

16. **Handheld Radios. IAW FCC policy unauthorized radios/communications equipment will remain in the cantonment area. This includes Citizen's Band Radios, civilian "walkie-talkies", radio scanners, and any RF transmitting equipment not formerly tested and approved by the NTC Spectrum Management Office. Responsibility for violating FCC policy lies with the RTU; hence enforcement responsibility is a unit responsibility. OC/Ts will not allow use of prohibited radios/communications equipment in the live fire training area because of safety considerations.**

17. **Use of Unsecure Hand-held Radios. Unsecure hand-held radios are not authorized for use at the NTC. RTUs should coordinate with the NTC Spectrum Management Office NLT 180 days prior to their arrival at the NTC for testing and approval of any RF transmitting equipment not formally tested or approved. RCS PMCS. RCS Service Shop is Open All BRD Days.**

18. **Hand Held Radio. Remove Battery. Inspect battery for crack casing; damaged locking plastic pin, broken silver contact. If damaged take to RCS shop for HAZMAT disposal and replacement. Clean battery with clean soft cloth, and prepare/initiate charging (see below), On the body of the radio, inspect the battery contact pins for corrosion. If corrosion is present take to RCS shop for water damage inspection.**

    a. **Inspect radio housing contacts. Two sets on bottom should be clean and "flex" from spring mount. There are 4 pins on each contact. One center set is fixed and should be clean. There are 6 pins on the contact. All contacts are present. If missing, take to RCS shop. Inspect housing for corrosion (white). If present take to RCS shop for water damage inspection. Inspect metal plate and connections to the housing (P2G plate) for missing set screws (2 on face, 2 on top side). If missing take to RCS shop for repair. Inspect belt clip (if mounted). If damaged take to RCS shop for repair. Inspect knobs. If lose of missing, take to RCS shop for repair. Inspect antenna. Lose or missing antenna, return to RCS shop for repair. Antenna unscrews and inspect for water damage (white corrosion). Lose or missing antenna, return to RCS shop for repair. Radio faceplate. All buttons present and working. If any buttons are missing, return radio to RCS shop for repair. Inspect base for pins used for hand mike connection, and antenna connection. If missing pins, take to RCS shop for repair. If any white corrosion present, take to RCS shop for repair. Inspect screen. If scratched and not readable, return to RCS shop. Clean radio with dry, soft cloth. Reinstall battery. Attempt commo check. If radio fails, remove battery and reinstall battery. If radio fails again, change battery, turn on and attempt commo check. If radio fails again, take to RCS shop. When able, check to see if radio has completed annual PM with RCS shop (sticker and dated). If no sticker or marking – take radio to RCS shop for PM by technician. Battery inspection and preparation during MAX Leave is critical. To optimize battery performance in the field after MAX Leave, all batteries should be conditioned and charged.**

    b. **To optimize battery performance in the field after MAX LEAVE, all batteries should be conditioned and charged. Battery charging – place battery in charger and condition, and then follow steps to recharge on your six bay chargers. Battery conditioning is a normal function after 3 charge "cycles" as a good practice. Old battery may retain charge without conditioning on a longer cycle (more than 3 cycles).Note: New batteries are sometimes issued without proper conditioning. New batteries can be identified as they have six screws, with a internal replaceable battery cell. Inspect this battery type - to insure all screws are in place. New batteries may require 2 complete conditioning cycles prior to charging, if the user is issued the battery from outside the RCS shop. Old batteries. If previously used, condition and charge during MAX Leave. If battery fails to charge it willcreate a failure code on the RCS radio. Return the battery to RCS shop for inspection/replacement.**

19. **RCS Ranger PMCS. Check for loose components or brackets; or frayed disconnected wires. If defective: BER: Return to RCS shop for repair, Clam Shell: Return to RCS shop for repair, Speakers: Return to RCS shop for repair, Ranger: Return to RCS shop for repair, Turn on Master**

Power switch to BER. If the Master Power is switch loose, broken, or whiter residue (water damage) then return to RCS shop for repair. Turn on Ranger. If No Power, then the vehicle batteries are drained. Contact Roadrunners or (Raytheon OCC talk group 306) for recovery. Once battery issue examined by support maintenance. Attempt to turn on Ranger.

a. **If Ranger fails to activate, return to RCS shop for repair (fuse; bracket, cable, or ground). If batteries for vehicle are fully charged, and Ranger has still has no power, return to RCS shop for repair (fuse; bracket, cable, or ground) and BER inspection. BER Hardig Case Inspection. Check for loose mounting; if loose return to RCS shop for repair Open case and inspect for any water or dirt reside. If water is present, return to RCS shop for repair immediately. Visually inspect for any loose wiring (do not pull or tug on any wire). Return to RCS shop for repair if any wire is loose, frayed or damaged. Inspect case top and clamps to ensure they close and latch (2 each); if clamps do not close and latch, return to RCS shop for repair.**

b. **Speakers. Visually inspect to ensure mounted and straps are securely holding speaker(s) in place. If defective, return to RCS shop for repair. Visually inspect for water damage (white residue from speaker faces), if damaged return to RCS shop for repair. If Ranger placed into operation, and no sound or sound, return to RCS shop for repair. Ranger CCP. If buttons are missing, damaged, or white residue (water damage) is present, return to RCS shop for repair. If faceplate is damaged or not readable (water seepage), return to RCS shop for repair.**

c. **If Ranger CCP is loose and not secure return to RCS shop for repair. COAX Cable (power) from BER. Check cable run (there are 2 possible configurations). Configuration 1. Cable passes through passenger battery box compartment (old style install). Configuration 2. Cable passes through passenger battery box compartment (new style install). If cable is loose or frayed return to RCS shop for repair.**

d. **RCS HH (if vehicle equipped) Speaker Cable. Inspect cable head. If plastic head is cracked or damaged return to RSC shop for repair. Check plastic clips. If less than two are present, return to RSC shop for repair. Check copper connections for damaged and cleanliness. Inspect for damage or white reside around connection holes or main power (white cable) connection mating. Clean dirty connection. If connections are damaged or cable is loose or frayed, return to RCS shop for repair.**

e. **Hand Microphone. Visual inspect. If face is cracked, or talk key or clip is loose, return to RCS shop for repair.**

f. **Once Ranger CCP is operational (powered) check to see if microphone talk key activates CCP (red light will appear on CCP). If no red light appears, return to RCS shop for repair. Inspect Clamshell for mounting and charging RCS HH. If base is dirty, filled with litter, sand or debris clean and wipe base and unit with damp soft cloth. Attempt to mount RCS Handheld. If RCS HH does not fit and bracket does not hold RCS HH radio return to RCS shop for repair.**

g. **Once Ranger CCP is operational (powered) check to see if clamshell provides power, and HH radio transmits (red light will appear on CCP) or is charging. If red light does not appear return to RCS shop for repair.**

h. **Turn RCS Ranger CCP into operation. If error codes appear return to RCS shop for repair**

20. **Operations Group CONPLAN for RCS failure is below.**

OPS GRP CONPLAN for RCS Failure

Situation: RCS fails or is degraded to such a point that unacceptable risk is incurred for the Observer Controller Communication System during rotation.

Mission: Provide alternate communications in the event of RCS failure or degraded conditions using FM frequency radios.

Concept of operation: In the event of RCS failure, the capability is to have one Net that every team can use for OPS CMD which has the ability to contact Warrior Main (Bldg 990) and to have two Team internal Nets to communicate. TOCNET already has all Nets loaded into the INI file. OCs are still able to communicate in the Box utilizing the RCS radio in "DIR" mode.

Tasks:

Vultures –

- Issue SOI – OPS GRP CMD net, and 2 x nets for each team

Warrior –

- Issue CONPLAN INSTR
- Conduct FM comms rehearsal

Coordinating Instructions:
• Ensure all OCCPs have operational ASIP radios IOT monitor and communicate with OCs and Warrior TOC
• Identify OC vehicles needing FM radios
• BPT execute team internal relay to cover operations and deadspace
• Ensure all teams maintain OPSEC on single channel net
• Identify BLUFOR OPS that cannot be covered with adequate OC FM coverage

Timeline:

H- 4:00
Warrior TOC issues CONPLAN Instructions and sets H Hour
Teams receive pre-established Commo Card with SOI (see below)

H- 2:00
OCCP radios prepped with CONPLAN frequencies (see below)

H- 1:45
DTOC executes Commex with OCCPs

H- 1:00
DTOC Commex with all Teams to confirm OCs are equipped to execute without RCS radios

H- Hour
All OCs are equipped with ASIP radio Comms

RADIO NAME	FREQ
BRONCO 1	30.050
BRONCO 2	30.200
TARANTULA 1	30.450
TARANTULA 2	30.500
SIDEWINDER 1	30.550
SIDEWINDER 2	30.600
EAGLES 1	30.750
EAGLES 2	31.000
COBRAS 1	31.125
COBRAS 2	31.500
WOLF 1	31.700
WOLF 2	31.800
SCORPION 1	31.900
SCORPION 2	32.125
GOLDMINER 1	32.600
GOLDMINER 2	33.200
RAVEN 1	35.00
RAVEN 2	35.875
DRAGON 1	60.450
DRAGON 2	61.050
DARBI 1	37.050
BOBCAT 1	41.925
PUMA 1	57.250
OPS CMD	58.450
OPS O/I	59.700
VULTURE MAIN	46.65
DIV CMD	100
BDE CMD	200

12-4 EWO

1. **COEFOR Electronic Support Measures (ESM) & Electronic Countermeasures (ECM) Effects. All RTUs are subject to attempted COEFOR ESM and ECM. The Operations Group Electronic Warfare Officer (EWO) coordinates with aviation assets for frequencies to jam. EWO directly coordinates with the Operations Group Frequency Manager to de-conflict with the NTC G6 Frequency Manager. Following approval for frequency range the Vulture 30 will sign the approval letter for the EWO to submit to the aviation unit.**

12-5 COMSEC

1. **The Fort Irwin COMSEC Management Office orders COMSEC material through the Army COMSEC management office at Ft. Huachuca, where it is electronically transferred to the Fort Irwin COMSEC account and subsequently distributed manually out of the Fort Irwin COMSEC Management Office through sub-unit hand receipt holders (Operations Group Teams) with SKLs.**

2. **Firefly and PPK keys. RTUs. RTUs must provide their own firefly and PPK keys. Other. 52ID NETOPS is responsible for all COMSEC for SNAP terminals, the 52ID JNN, Lan-in-a-Can (LIC) kits, and Fly-Away-Kits (FAK).**

3. **COMSEC Compromises. COMSEC/CEOI compromises will be reported immediately to WARRIOR Main via Operations, G2 and G6 channels. RTU/BCT is not authorized to initiate COMSEC compromise actions until directed by the COMSEC Controlling Authority. The RTU will not execute a key supersession in the case of compromise they will execute a Julian date change.**

12-6 Information Assurance

1. **RTU Requirements. RTU Requirements. BCT must meet the following Information Assurance requirements prior to the BCT given authorization to enter into the box for training. TAB C**

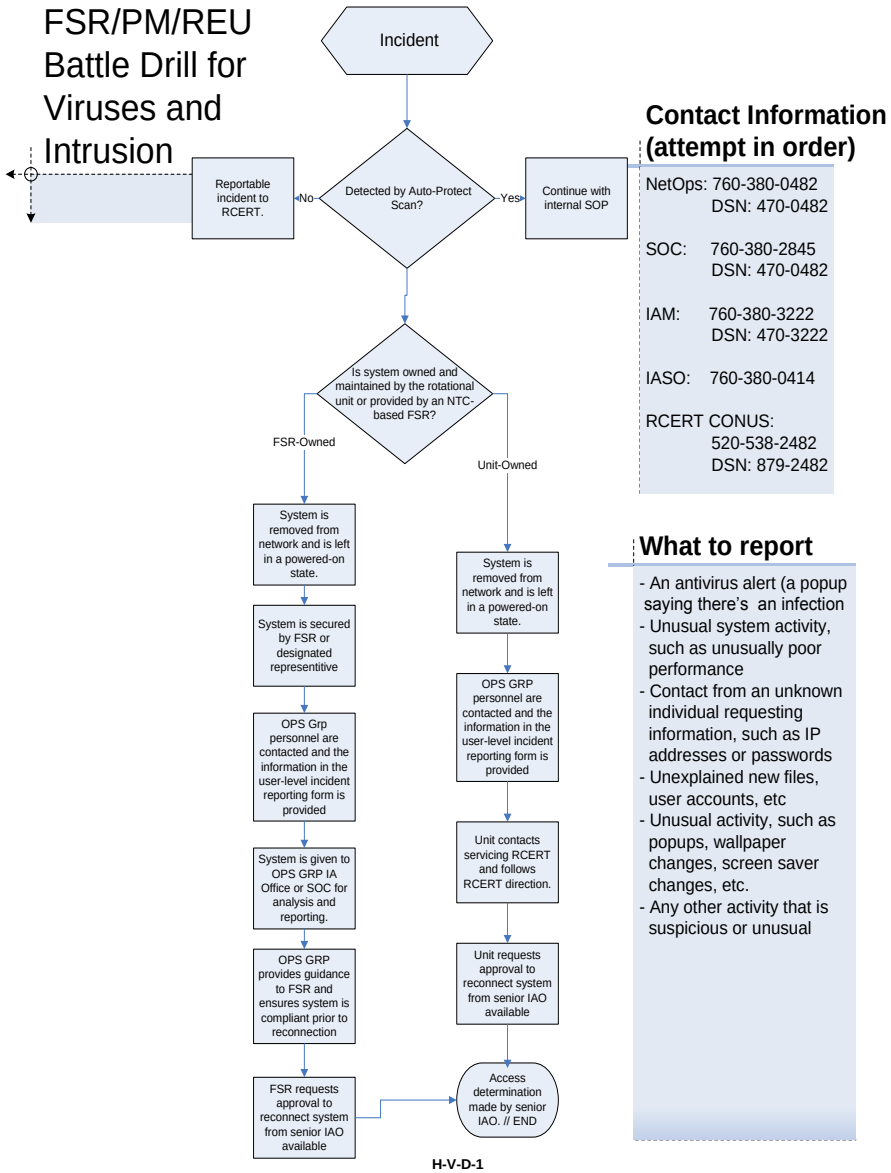
provides a checklist to assist unit in improving their IA posture and provides required report to insure 100% unit compliance prior to deploying into the box.

2. **Reporting. Information Assurance reporting begins as soon as your network comes up. During CPX on RSOI 3 100% of systems should be 100% IA compliant. All systems must be managed by AV server before Commanding General will authorize unit to move into box. IA Status is reported daily at 0200hrs and 0400hrs (Annex H, Appendix 4, Tab A). NLT 1500 on RSOI 3 IA Compliance Reporting is mandatory, broken down by battalion (Annex H, Appendix 4, Tab B). IA Checklist detailing criteria for AV server, WSUS server, and clients is located (Annex H, Appendix 4, Tab C).**

3. **Incident Response Flowchart.**

FOR OFFICIAL USE ONLY

TAB D (FSR INCIDENT RESPONSE FLOW CHART) TO APPENDIX 5 (INFORMATION ASSURANCE IGUIDANCE TO ANNEX H (C4) TO 52 ID OPORD 10-05-02 52 ID



H-V-D-1

FOR OFFICIAL USE ONLY

4. **Virus Incident Report must be submitted only if a virus infects your network (Annex H,Appendix 4, Tab E). IA Compliance Report is to be posted on the 52ID G6 SharePoint Portal as the BCT network is stood up it is located (Annex H, Appendix 4, Tab F).**

5. **15-6 Investigations. The RTU will conduct a 15-6 investigation for the following IA incidents on the RTU network. Incident of a virus being identified on the network. Unauthorized release of classified information onto a network of a lower classification; "spillage". Incidences of a cross domain violation; connection of a classified system to a network of a lower classification, or the unauthorized connection of two networks of differing classifications.**

6. **OC/T Reporting Requirements. 5 Ws Report to Warrior Main. OC/T teams will provide a 5 Ws report to DTOC upon occurrence of a reportable IA incident on the RTUs network.**

12-7 Logistical Systems

1. **BLST, Digitial Systems Engineer (DSE). HICON Digital Systems Engineer DSE coordinates the activities of all C4I FSRs in support of the RTU. HICON DSE works for the Brigade Logistics Support Team (BLST); however, works very closely with Vulture 57A and Vulture 30 to ensure all the assets from the NTC are being utilized accordingly.**

12-8 Cyber Defense

1. **The CYBER OPFOR team at the National Training Center is charged with providing the RTU with a realistic cyber threat in order to provide commanders and network personnel with training and familiarization with information security procedures and technology and the execution of their incident response SOPs.**

2. **The Commander of Operations Group is the release authority for all cyber defense actions conducted by the CYBER OPFOR. The CYBER OPFOR will coordinate all cyber activities and affects through NTC trusted agent b. The CYBER OPFOR will not compromise any Personal Indentifying Information, HIPAA controlled information, military justice information, information relating to the exercise of worship or religious pursuits and other information outside of the scope of the CYBER OPFOR charter. The CYBER OPFOR will not compromise classified information. If the RTU suspects or detects activity from the CYBER OPFOR on the network they will take the appropriate defense actions in accordance with their incident response plan and will notify 52ID Main and G6.**

Chapter 13
Safety

CHAPTER 13 – SAFETY:

13-1 General Information

1. **Rigorous Training. The National Training Center will expose your soldiers to the most rigorous and realistic training found in the world. While here, you will never have a more important task than protecting yourself and the lives of your soldiers. You will be able to safely accomplish your unit's training objectives if you follow your home station safety precautions, enforce safety discipline within your unit, and use common sense.**

2. **Rigorous Desert Environment. Surface temperatures in the Mojave Desert reach 125 degrees Fahrenheit during summer months. Winter month temperatures fall below freezing for periods lasting over 48 hours. Heavy rains in the training area and runoff from adjacent mountain ranges rapidly turn dry stream beds and wadis into free flowing rivers. Wind storms occur year round. The highest wind velocity recorded at the NTC is over 100 MILES per hour. Added to this climate is a potentially dangerous wildlife population.**

13-2 Rotational Unit Safety Officers

1. **Rotational Unit Safety Officer. Rotational units must deploy with a Rotational Unit Safety Officer (RSO) from their home station safety office. This may be a civilian or an officer (O-3 or above) with appropriate tactical, ammunition, and range safety training and/or experience to serve as the Rotational Safety Officer. The RSO will assist the unit with safety issues and act as a liaison between the rotational unit and National Training Center safety officials.**

2. **Status as a 'Player': The Rotational Safety Officers are not "players" during the rotation. They are assigned as staff officers to monitor the safety and health of soldiers during training activities and liaison effectively with critical NTC & Fort Irwin elements within the cantonment area.**

3. **MILES for Safety Officer. The BCT Safety Officer is not considered to be a member of the player unit and will not wear IWS and HALO. His or her vehicle will be marked with Safety placards identifying the vehicle as an administrative vehicle. The BCT Safety will be issued a RTD MILES casualty card.**

4. **Aviation Safety Officers. Aviation units will appoint a U.S. Army Safety Center (USASC) Aviation Safety Officer (ASO) for Aviation Task Forces (ATF) regardless of size or composition. This ASO is considered to be a member of the player unit and will wear IWS and HALO. His or her vehicle will be equipped with MILES equipment as appropriate for the vehicle type. The ASO will be issued a RTD MILES casualty card.**

13-3 Force Protection

1. **General. Force protection is a command responsibility. The NTC provides a daily safety risk assessment, safety observations, and on the spot safety corrections to assist the commander in managing the unit safety risk program. The specific restrictions in this chapter will be included in commanders' safety risk programs.**

2. **Unit Requirements. Units at all echelons are required to integrate risk management into all phases of mission or operational planning, preparation, execution, and recovery at Brigade, Battalion, Company, and Platoon level IAW ATP 5-19 Risk Management. For deliberate/pre-planned operations, the deliberate risk assessment worksheet DA FORM 2977 should be completed. For all other mission requirements, risk management must be briefed at a minimum. At times the evolving battlefield environment presents Commanders and leaders with situations where time is not available to complete a deliberate risk assessment worksheet. In these cases, the RM process must be completed mentally and verbally briefed to subordinates. OC/Ts will look at the safety of their counterpart unit routinely, conduct periodic spot checks of the unit's deliberate risk assessment worksheets at all echelons, and provide feedback where appropriate. A signed copy of the unit Commander's deliberate risk assessment worksheet must be provided upon request to their OC/T.**

3. **Assessments of MODERATE or below may be approved by the Rotational unit commander. Assessments of HIGH or EXTREMELY HIGH must be approved by the Commander of Operations Group acting as the ADC(M) and the rotational senior trainer. During live fire operations the unit will not be granted a RED status for direct or indirect fire weapons until control measures specified by the unit deliberate risk assessment worksheet have actually been emplaced by the unit.**

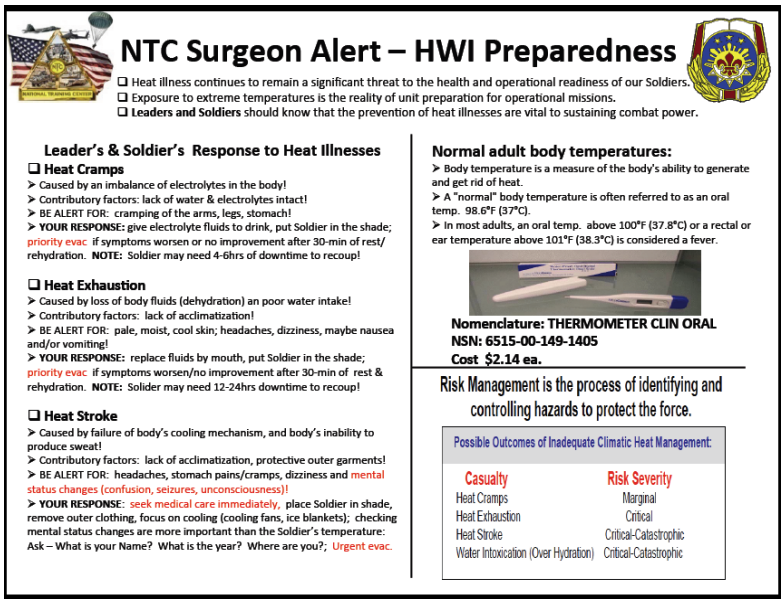
4. **Force Protection. The rotational unit should include a paragraph 6 in all unit OPORDS, warning orders, and FRAGOs entitled Force Protection, which includes specific safety requirements for the upcoming mission. This also may be accomplished by incorporating force protection into all appropriate paragraphs and annexes. Risk assessments should be updated as the mission changes.**

5. **Safety Kills. OC/Ts may assess soldiers/equipment as Safety Kills in special cases to prevent repeated safety violations. A Safety Kills must be evacuated / recovered by the unit and will be assessed as a DOW. Safety Kills will be noted on the Soldier's MILES casualty card or vehicle BDA card and chain of command will be informed.**

13-4 Heat Related-Illness

1. **General. Heat Related-Illness is the number one injury resulting in emergency medical evacuation of soldiers. Insufficient water intake is the largest single cause of heat injuries.**

2. **Heat Casualties.**



NTC Surgeon Alert – HWI Preparedness

- ❑ Heat illness continues to remain a significant threat to the health and operational readiness of our Soldiers.
- ❑ Exposure to extreme temperatures is the reality of unit preparation for operational missions.
- ❑ **Leaders and Soldiers** should know that the prevention of heat illnesses are vital to sustaining combat power.

Leader's & Soldier's Response to Heat Illnesses

❑ **Heat Cramps**
- ➢ Caused by an imbalance of electrolytes in the body!
- ➢ Contributory factors: lack of water & electrolytes intact!
- ➢ BE ALERT FOR: cramping of the arms, legs, stomach!
- ➢ **YOUR RESPONSE:** give electrolyte fluids to drink, put Soldier in the shade; priority evac if symptoms worsen or no improvement after 30-min of rest/ rehydration. **NOTE:** Soldier may need 4-6hrs of downtime to recoup!

❑ **Heat Exhaustion**
- ➢ Caused by loss of body fluids (dehydration) an poor water intake!
- ➢ Contributory factors: lack of acclimatization!
- ➢ BE ALERT FOR: pale, moist, cool skin; headaches, dizziness, maybe nausea and/or vomiting!
- ➢ **YOUR RESPONSE:** replace fluids by mouth, put Soldier in the shade; priority evac if symptoms worsen/no improvement after 30-min of rest & rehydration. **NOTE:** Solider may need 12-24hrs downtime to recoup!

❑ **Heat Stroke**
- ➢ Caused by failure of body's cooling mechanism, and body's inability to produce sweat!
- ➢ Contributory factors: lack of acclimatization, protective outer garments!
- ➢ BE ALERT FOR: headaches, stomach pains/cramps, dizziness and mental status changes (confusion, seizures, unconsciousness)!
- ➢ **YOUR RESPONSE**: seek medical care immediately, place Soldier in shade, remove outer clothing, focus on cooling (cooling fans, ice blankets); checking mental status changes are more important than the Soldier's temperature: Ask – What is your Name? What is the year? Where are you?; Urgent evac.

Normal adult body temperatures:
- ➢ Body temperature is a measure of the body's ability to generate and get rid of heat.
- ➢ A "normal" body temperature is often referred to as an oral temp. 98.6°F (37°C).
- ➢ In most adults, an oral temp. above 100°F (37.8°C) or a rectal or ear temperature above 101°F (38.3°C) is considered a fever.

Nomenclature: THERMOMETER CLIN ORAL
NSN: 6515-00-149-1405
Cost $2.14 ea.

Risk Management is the process of identifying and controlling hazards to protect the force.

Possible Outcomes of Inadequate Climatic Heat Management:

Casualty	Risk Severity
Heat Cramps	Marginal
Heat Exhaustion	Critical
Heat Stroke	Critical-Catastrophic
Water Intoxication (Over Hydration)	Critical-Catastrophic

13-5 Cold Related-Illness

1. **Hazard. Extreme weather conditions and severe temperature fluctuations occur during winter months. High winds will produce a significant wind chill factor.**

2. **Risk Reduction. It is important to use cold weather clothing properly, maintain adequate hydration and ensure nutritional requirements to ward off cold weather injuries. When wearing clothing in cold weather, remember the acronym C-O-L-D.**

   C: Keep it Clean; O: Avoid Overheating; L: Wear clothing Loose and in layers; D: Keep clothing Dry

3. **Frost Bite. Symptoms: Numbness in affected area, tingling, blistered, swollen, or tender areas, pale, yellowish, waxy-looking skin (grayish in dark-skinned soldiers), frozen tissue that feels wooden to the touch, significant pain after re-warming.**

4. **Treatment: Warm the affected area evenly with body heat; loosen or remove any tight clothing and remove any jewelry; do not re-warm a frostbite injury if it could refreeze during evacuation or if victim must walk for medical treatment and seek medical attention.**

5. **Hypothermia. Symptoms: Vigorous shivering, confusion, sleepiness, slurred speech, shallow breathing, weak pulse, low blood pressure, change in behavior and/or poor control over body movements/slow reactions..**

6. **Treatment: Re-warm with body-to-body contact or in a warmed sleeping bag, replace wet clothing and movement/light exercise are sufficient to restore core temperature, drink warm liquids (if conscious) and seek medical attention.**

13-6 Rainstorms, Flash Floods, and Lightning

1. **Rainstorms, Flash Floods. Hazard. The Mojave Desert has deep wadis created by severe rainstorms. Desert terrain does not have the capacity to absorb much water. As it rains, the runoff can become considerable and flash floods occur. The rainfall does not have to occur on the reservation to produce runoff sufficient for major flooding. Risk Reduction. Do not park, sleep, or**

remain in wadis or ravines during wet weather. Do not attempt to cross flooded areas. Avoid standing water and upper elevations to minimize the possibility of encountering ground strikes from lightning.

2. **Cold and Wet Weather. Incase the cold/wet weather is severe the 52ID DTOC with the RTU or NTC execute NOAH's ARK (Incliment Weather Plan) see figures 1-3 below and/or refer to NTC REG 350-12, dated 01 AUG 14.**

Figure 1. (Noah's OP Plan)

Noah's Ark is a OPLAN that allows the RTU to execute the inclement weather contingency plan as necessary for the Rotations to ensure Light Infantry Soldiers and equipment are expeditiously moved to dry out areas on Fort Irwin

The goal is to implement this OPLAN in a quick, orderly manner to get Soldiers and their equipment dried out and back on the battlefield as soon as possible

Procedure:

- ❑ RTU initiates the request for implementation of Noah's Ark to the DTOC
- ❑ RTU is responsible for executing the mission

Key Tasks.

- ❑ Recovery of RTU Soldiers and equipment to designated dry out site(s)
- ❑ Identification of required logistical support augmentation
- ❑ Return of RTU Soldiers and equipment to battlefield

Endstate. All affected RTU Soldiers and equipment dried out and safely returned to the battlefield; resumption of rotational training; all logistical support augmentation returned and prepared for follow-on use as required.

Figure 2. (OPS GRP and RTU Tasks)

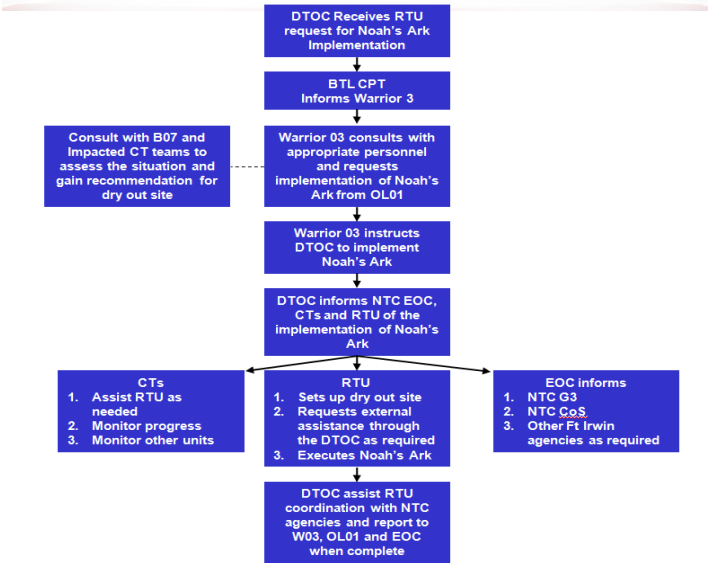
OPS GRP

- ❑ Inform RTU on Noah's Ark during RSOI 1
- ❑ Serve as approving authority for Noah's Ark.
- ❑ Liaise between NTC HQs and RTU
- ❑ The COG will make the location decision of the dry out area
- ❑ Select dry out site (Priority 1: Rotational Unit Bivouac Area (RUBA). Priority 2: Gyms, Freedom Fitness, Memorial Gym, with the overflow going to MCC Building 828)
- ❑ Designate CL V site if using Pri 2 dry out site
- ❑ Assist RTU in execution of Noah's Ark as necessary

RTU

- ❑ Backbrief OPS GRP on the execution of OPLAN "Noah's Ark"
- ❑ Responsible for execution
- ❑ Transport equipment & Soldiers to site
- ❑ Establish and operate CL V download site
- ❑ Coordinate with CDR, USAG (DOL) if transportation augmentation is required
- ❑ Provide 4-6 Herman Nelson Heaters to dry out sites
- ❑ Coordinate with CDR, USAG (DOL) if dry sleeping bags are required
- ❑ Provide internal measures for weapons/sensitive items security and personnel accountability
- ❑ Provide light sets to illuminate the dry out area
- ❑ Provide CL I & warming beverages as required

Figure 3. (Noah's Battle Drill)



3. **Lightning. Once a weather warning advisory of lighting observed within 5 miles nautical is received, commanders will ensure that severe weather countermeasures are integrated into their risk assessment. Also, prior to each training event, commanders will designate locations and procedures to follow when a lightning alert is given. The following safety information will help ensure soldier safety during lightning. Seek a safe shelter immediately. If you're unable to find shelter in a building that is equipped with lightning protection, follow these procedures: Disperse personnel—do not group together (minimum of 15 ft.) to other soldiers. Avoid metal bleachers. Ranges: clear the firing line of all personnel, ground and stack weapons, remove equipment (i.e. Kevlar helmet, ALICE pack, knives, radios, and any other metal or electrical equipment. Leave ammo in place stacked back into its original boxes. Turn off all radios except for one to maintain contact with range control (emergency use only). Move to available shelters, buses vehicles, covered buildings. Stay away from isolated trees or poles in open areas. Avoid open fields or bare hilltops. Avoid large masses of steel in open terrain (mounted guns, field pieces, wire fences, and vehicles). Do not seek shelter under a vehicle. The insulating effect of vehicle tires may cause a body under a vehicle to become a conductor of an electrical charge from the vehicle to the ground. Get out of fighting positions. Seek shelter in a fully enclosed vehicle if possible and roll up the windows. Disconnect all electrical equipment from power sources and radio antennas. Do not operate radios, telephones or switchboards. Ensure all equipment is properly grounded. If inside a building during an electrical storm, remain clear of water pipes and electric or communication lines. Move away from explosive items armed for electrical detonation. Suspend operations for 30 minutes after the last observed lightning or thunder. This is a conservative approach and may not be practical in all circumstances. Actions When Caught in the Open. Actions to take if caught in the open during an electrical storm: Crouch down. Put feet together and place hands over your ears to minimize hearing damage from thunder. Do not lie flat on the ground.**

4. **First aid for injured persons. Personnel that have been struck by lightning do not carry an electrical charge and can be handled safely. Make sure all lightning victims have a medical examination even if they do not seem to need it. Besides burns, lightning can also cause nervous system damage, broken bones and loss of hearing or eyesight. It is unusual, however for victims who survive a lightning strike to have major fractures that would cause paralysis or major bleeding unless they have suffered a fall or been thrown a distance. Lightning strike victims**

should be taken to level II medical care as a minimum, even if they survive the strike because it is not uncommon to suffer a heart attack following such an incident. Victims may experience confusion and memory loss. First aid for lightning victims needs to be carried out immediately. After the lightning strikes, get to the victim as quickly as possible. If the victim is not breathing, provide mouth to mouth resuscitation. If the victim has no pulse, (check for the pulse at the carotid [neck] or femoral [knee] artery for 20 -30 seconds) then start CPR. If the area is cold and wet, putting a dry article of clothing between the victim and the ground helps decrease the threat of hypothermia that the victim may suffer. Prepare the victim for ground evacuation and evacuate without delay! Air evacuation will most likely be unavailable due to severe weather.

13-7 Wildlife

1. **General. Poisonous snakes, spiders, scorpions, insects, and large wild animals indigenous to the Mojave Desert are abundant on the reservation. Bobcats and coyotes are found on all parts of the reservation and roam freely in the cantonment area.**

2. **Coyotes & Bobcats. Hazard. Both bobcats and coyotes have been known to attack Soldiers when threatened. Risk Reduction. Soldiers must leave wildlife alone. Do not feed desert wildlife. Feeding wildlife will cause them to lose their natural fear of humans and may cause them to become aggressive. Remedial Action. Anyone bitten should carefully cleanse the wound and immediately seek medical help. Coyote bites are treated for potential rabies infection.**

3. **Desert Tortoise. Hazard. The desert tortoise is protected by State and Federal Wildlife Endangered Species regulations. Penalties include up to one year imprisonment, and $50,000 fine. A significant tortoise population exists on the NTC reservation. Risk Reduction. A tortoise preserve and nursery has been established south of the 90 E/W grid line on the NTC. This area is fenced and clearly marked. Tracked vehicle maneuver is not authorized in this area. Soldiers should be alert for tortoises throughout the training area and avoid contact. Remedial Action. Tortoises encountered on roads and trails should be removed to prevent collisions with vehicles. Injured animals should be protected from further harm and reported to the DTOC. DPW, Environmental section, will collect these animals for treatment.**

4. **Poisonous Snakes. Hazard. Four species of poisonous snakes have been found on Fort Irwin: Western Diamondback (3-5.5 feet long; up to 15 pounds; pale in color but varies from gray to yellow or pink; tail marked with black and white rings); Speckled Rattlesnake (usually yellowish, gray, or pink and sometimes white); Sidewinder (1.5 - 2.5 feet long; cream, tan gray, light brown, or pink with rows of dark spots; elevated horns above the eyes); and the Mojave Green Rattlesnake (greenish or olive in color; 2.5 - 3.5 feet long). The Mojave Green Rattlesnake is the most poisonous snake in North America. A snake bite is a serious life threatening condition. The victim may experience severe pain followed by a rapid swelling and discoloration in the area of the bite. The bite of the Mojave Green may not show immediate effects. It is vitally important to get all victims to medical facilities as soon as possible. Do not wait for signs of venom injection prior to transporting. The victim of a snake-bite, who does not receive medical treatment, may experience shock, weakness, paralysis, and possible respiratory failure. Death can occur within the first 24 hours. Risk Reduction. During hot summer months snakes will hunt for food during the early morning, late afternoon and night hours. Snakes prefer rocky habitats and will be in the shade or burrow in the heat or basking in the CT-OIS shine when trying to get warm. Understanding the current weather conditions can help you know where to look for them when operating dismounted. If you see a snake, avoid it. If it is near the assembly area, tell an OC/T. Most people are bitten trying to catch the snake. Remedial Action. If a Soldier is bitten by a snake: Remember the snake markings and color. Do NOT get others injured in attempting to kill or capture the snake. If possible take pictures without getting too close to the snake. If the snake is dead, carefully place it in a secure container for transport to the medical facility for identification. Sit the patient in the shade. Do not let the victim stand or walk around. Keep the patient as calm and comfortable as possible. Immobilize the wounded extremity. Place a strap or belt snugly above the bite. Tighten the strap around the limb to retard the blood flow but do not stop the**

pulse. Treat for shock. DO NOT elevate the bitten extremity. MEDEVAC the patient as soon as possible. DO NOT use the 'cut and suck' method of treatment. You risk becoming the victim of snake poisoning!

5. **Arachnids (Scorpions and Spiders). Hazard. Scorpions and several species of poisonous spiders are found throughout the desert. Some species of spiders found on NTC are potentially dangerous to humans. The venom of a Recluse Spider, as with many insects, may be life threatening if a bitten soldier has an allergic reaction to the insect venom. Risk Reduction. Avoid insect stings and bites by hanging clothes, boots, and sleeping gear off the ground. Check bedding before use. Shake out boots and check socks and clothing before putting them on. Remedial Action. If anyone is stung or bitten: Always treat insect bites seriously. Keep patient quiet and send for medical aid. The puncture points should be cleansed with an application of a mild antibacterial agent. Cool the area 10 to 12 inches around the puncture point with ice.**

13-8 Lost in the Desert

1. **Hazard. It is deceptively easy to become lost at the NTC. A soldier lost in the desert during summer (temperatures of 110 or above) can survive three (3) days. This figure assumes a full canteen of water, and that the soldier remains immobile in a shaded area. Physical activity will significantly reduce survival time. Report all soldiers lost in the desert to an OC/T immediately. OC/Ts will assist in the search effort to find soldiers lost in the desert.**

2. **Risk Reduction. Prevent becoming LID by determining where you are and the distances to be traveled prior to leaving. Always use a map, the vehicle odometer, and a compass. Use terrain association and move from one identifiable terrain feature to the next. Travel Plan. Plan your travel during daylight and move before dark. If you must travel at night, travel the route in the daylight or go with someone who knows the way. Use the Buddy system. Most training incidents, in which an individual was lost, could have been prevented by using the "Buddy System". Two individuals will be counted as missing sooner than one person and two are less likely to become lost. The "Buddy System" is mandatory in dismounted operations. Soldiers Manning TCPs. Soldiers left manning Traffic Control Points (TCPs) must be left in pairs, and must have adequate water and shade. An individual soldier can easily get disoriented or fall asleep. Survival Items. Commanders should encourage their soldiers to carry handy survival items such as: a pocket knife, a watch, matches or a lighter, CT-OIS-block, flashlight, sunblock and lip balm.**

3. **Remedial Action. Parent Unit. Training units will notify an OC/T when soldiers are reported missing from their units and will keep OC/Ts updated on search progress. LID Soldiers(s). If you are in a vehicle, do not leave it. A search party will spot a vehicle easier than someone walking. Move to open terrain if your vehicle is operational. Use the vehicle's mirror for signaling. If your radio is operational, contact your unit and explain your situation. The radio can also provide a homing signal for search and rescue aircraft. If you become lost at night and believe it is unsafe to continue, STOP and wait for daylight. Prepare visual or audible signaling devices for searchers to see or hear.**

13-9 Sleeping Areas

1. **General. Whenever possible Soldiers will sleep in the approved established sleep tents. The establishment of safe sleeping areas will be IAW the unit's SOP. Commanders will ensure that sleeping area perimeters are designated and marked. They should select sleeping areas protected by natural obstacles when possible.**

2. **At a minimum, sleep areas that are established without tents or tents smaller than GP medium will be marked with white engineer tape that is Hip high and approximately 20 feet from sleep area. At night this area will have chem. lights placed no further than twenty feet apart. Vehicles placed as a barrier will be positioned so that they cannot roll into the sleep area and will always have chock**

blocks in place. DO NOT sleep under vehicles. Leaders/drivers must verify that personnel are not sleeping under or near vehicles prior to movement.

13-10 Vehicle Operation

1. **General. The leading cause of NTC fatalities is vehicular accidents. Operators driving at unsafe speeds over unfamiliar terrain and during periods of limited visibility are the leading factors in NTC vehicular accidents.**

2. **Licensing. All soldiers must be licensed on the vehicle they are assigned to operate before deploying to the NTC. Units will not conduct driver's qualification training while at the NTC. Soldiers who are not licensed to drive with NVGs at their home station will not be permitted to drive at night at the NTC (Units are encouraged to conduct training for the purpose of familiarizing drivers with the desert environment which cannot be accomplished at home station). NOTE: When utilizing the NVGs for driving purposes, the NVG may not be used in the hand-held mode. The NVG must be worn in the head mounted or helmet mounted position and should never exceed 25 MPH under any circumstance.**

3. **Rollover and Fire Drills. Unit commanders will ensure vehicle rollover and fire drills are conducted prior to deploying for the rotation and refresher training is conducted as part of RSOI operations. Rollover and Fire Drills will be rehearsed prior to the moving of vehicles. The Gunner Restraint System, (GRS), along with established rollover procedures, is a safety enhancement for turreted vehicle systems. Soldiers must be instructed to not rely solely on the GRS to prevent injury in the event of a rollover or vehicular accident.**

4. **Convoy Operations. Convoys will consist of a minimum of 3x vehicles traveling outside the TAA or FOB. At a minimum, one vehicle within the convoy must have FM and digital (BFT, FBCB2, or MTS) comms with their higher headquarters. Convoy commanders must brief routes, hazardous areas, conditions, intervals, speed, rest stops, and signals to all drivers and assistant drivers prior to road marches. Reference the 52ID Deployment Order for further theater specific convoy requirements and restrictions.**

5. **Required Equipment.**

    a. **Headgear. All soldiers must wear a (combat vehicle crew, approved ballistic helmet, or flight helmet as appropriate), while operating or riding in tactical military vehicles at all times.**

    b. **Eye Protection. Soldiers will wear Eye protection (ANSI Safety Code Z87.1), while operating or riding as a passenger in Army motor/combat vehicles.**

    c. **Safety Restraints. Safety belts are mandatory for front and rear seat vehicle occupants. The GRS is a personal safety restraint device, as are seat belts, seat belt Restraint systems, safety straps, and any other safety device that is used to secure or provide a safety mechanism to a soldier operating or riding in a vehicle. All vehicle systems with turrets must have an approved safety Restraint device mounted in the vehicle.**

6. **Safety Deficiencies. Vehicles with safety deficiencies (e.g. non-mission capable brakes or steering) will not be operated until deficiencies are corrected IAW AR 385-10.**

7. **Intercom. Tracked vehicles will not move without ground guides when the intercom system is inoperative.**

8. **Hatches. Vehicle hatches will be secured using an approved locking pin or latching device at all times. TCs will inspect safety pins daily for serviceability and security. Vehicles with broken hatch pins or latching devices will not be operated until proper repairs have been made or specifically**

authorized by the unit commander. Combat override disables safety interlocks. Soldiers can be killed or seriously injured without safety interlocks working. Do not activate combat override unless turret shield door, driver's hatch, and cargo hatch are closed. Do not activate combat overrides unless in COMBAT and hatch switches have received battle damage

9. **M1 Driver's Hatches. The driver hatch of the M1 series tank will be closed whenever the tank is moving and/or whenever the turret is in operation.**

10. **Load Plans. All vehicles must have load plans and the vehicle's equipment will be secured IAW the load plan. Transport personnel only in vehicles with approved troop seats. DO NOT transport personnel in vehicle trailers/shelters. Personnel will be wholly contained within the body/sideboards of any vehicle. Secure safety straps and tailgates when transporting troops. All personnel will be seated when the vehicle is in motion. Fatalities associated with vehicle roll-overs are directly related to unsecured equipment crushing occupants inside the vehicle.**

11. **Antennas. Tie down antennas when moving within the cantonment area. Cover antenna tips with a protective ball to prevent injury to personnel.Commanders will ensure that sleeping area perimeters are designated and marked. They should select sleeping areas protected by natural obstacles when possible.**

12. **TC / VC / Senior Occupant Requirements.The vehicle commander is responsible for the safety of the soldiers assigned to his vehicle and will ensure that all occupants of the vehicle use the appropriate safety restraints. TCs will inspect vehicle load plans and correct deficiencies prior to moving vehicles. TCs will inspect/search the ground in front, rear and sides to clear personnel and equipment before moving. Rotational unit TCs will ensure that ground guides are present when operating vehicles in the vicinity of, or while going through all assembly areas. Front and rear ground guides will be used when backing vehicles larger than M998 series vehicles. Ground guides will be used during limited visibility operations whenever driver's visibility is so poor that he or she is required to reduce the vehicle speed to the speed of a brisk walk (FORSCOM Reg 385-1, paragraph 5-6b(3)). Because OC/Ts do not have ground guide capability, the maximum speed limit for OC/Ts in an assembly during daylight hours is 5 MPH. OC/Ts will park their vehicles outside the rotational unit's assembly area perimeter during limited visibility.**

    a. **Tracked Vehicle TCs / Vehicle Gunners. Tracked Commanders must be in position before moving their vehicles. TCs and Vehicle gunners must be nametag defilade in the TC hatch when the vehicle is in motion.**

13. **Maximum Speeds. DO NOT SPEED. Maximum vehicle speed limits are listed in Chapter 1. Environmental and other factors will often dictate lower limits than those shown.**

14. **Limited Visibility. Take extra precautions while driving during the periods of limited visibility (night, dust, or less than optimum driving conditions). Slower driving speeds; be alert for obstacles such as barbed wire, tank ditches, wadis, on-coming vehicles, etc.; and dismounting personnel to reconnoiter forward prior to moving vehicles. Observer Coach/Trainers (OC/Ts) will maintain the same level of vehicle light discipline as their rotational counterparts during operations under conditions of limited visibility to prevent compromising the location of their rotational counterparts to opposing forces. OC/Ts will mark their vehicles with a chem-light if they leave their vehicle unattended (i.e., dismounting with rotational counterparts) during hours of limited visibility to prevent collisions with other vehicles.**

15. **Vehicle Running Lights. During DATE operations, the rotational unit chain of command will determine the level of vehicle light discipline based on the tactical situation. During FOF, white lights will be used by vehicles traveling on all MSRs and within one kilometer of FOBs and urban areas. For all other NTC training areas, rotational units will adhere to their respective TACSOP concerning vehicle operations in blackout conditions or the utilization of blackout markers during conditions of limited visibility based on the tactical situation. OC/Ts will operate under blackout**

conditions or IAW the level of light discipline exhibited by their respective rotational counterparts when operating in any training areas not in the cantonment area.

16. **Vehicle Searchlight Restrictions. Vehicles equipped with searchlights will not use searchlights against helicopters at any time.**

17. **Wet Weather Conditions. The winds and rain can rapidly change terrain conditions. Wadis and cliffs can be cut quickly across roads and cross country. Take extreme caution even when operating in areas that you have driven in before.**

18. **Personnel Riding on Exterior of Vehicles. Rider DO NOT sit or ride on top of moving vehicles (except infantry soldiers riding on tanks during tactical operations and only when approved by an O-6 level CDR).**

19. **Seat Belts. All personnel are required to use seat belts/safety restraints when available.**

20. **Track Vehicles Restrictions. Tracked vehicles will not operate inside of towns or villages. Track vehicles will cross hard surface roads at track crossing sites in the cantonment area, Outer Loop Road, and MSR Bull Run south of the water tower.**

21. **FOF Light Guidance. During FOF operations the light line will not be at any specific area. Follow Division guidance on where and when white lights will or may be used. White light is mandatory within one kilometer of all towns/villages, and MSRs specified by the 52ID during limited visibility.**

13-11 Aviation

1. **Governing Regulations. Rotational unit aircraft will operate at the NTC IAW NTC Regulation 95-1, APG, ACO, and their unit TACSOP. Air To Air Engagements. Air-to-air engagements are not conducted during Force on Force scenarios. Air-to-air stingers (ATAS) may be fired at an RPVT during live fire operations.**

2. **Proximity to Ground Forces. Vehicles and Soldiers. Aircraft will never approach, fly-over, dust, or land within 100 meters of soldiers or vehicles. Aircraft must land down-wind from soldiers when possible. Dust Mitigation. Aircraft will not use hovering techniques to intentionally stir up dust and debris when conducting aerial searches for opposing ground forces. Violators will be adjudicated as Safety Kills.**

3. **Scheduled Landings. If required to make a scheduled landing in Force-on-Force operations, pilots will land in an area which will not interfere with ground vehicles.**

4. **Pyrotechnics and Aviation Restrictions. Soldiers will never fire pyrotechnics toward aircraft.**

5. **Thrown from Aircraft. No aircraft is authorized to drop ordnance or use Non-eye safe laser without approval.**

6. **Airmobile Operations. Soldiers being transported and aircrews must be trained in conducting airmobile operations. Soldiers loading, riding and departing aircraft must follow instructions from the aircraft pilot or crew chief (FM 90-4). For personnel to ride in aircraft without troop seats FORSCOM approval is required.**

13-12 UXOs Found in the Training Area

1. **Hazard. The NTC has provided the military community with a long history of training that dates back prior to World War I. The reservation has been used as an open target range by all the military services. Numerous gunnery ranges and target hulks can be seen throughout the**

reservation. While many portions of the reservation have been surfaced cleared of live and dud munitions, both live and dud munitions continue to be found.

2. **Risk Reduction. Abide by maneuver and excavation restrictions listed in Chapter 1. Do not enter off limits or restricted areas. Remedial Action. The following rules apply when you find live or dud ordnance in the field. Default to Danger. Assume that all bombs, projectiles, canisters, and rockets are live ordnance. Stay Away. Do not approach, touch, run over, or disturb UXOs. Marking. Mark ordnance found IAW CTT standards. Mark all UXO using the NATO UXO markers, or, as an alternative, with pickets or stakes. Place chem-lites and engineer tape three (3) feet off the ground so that they are visible from all approach routes. Report all UXO using the standard 9-line UXO spot report through your unit chain-of-command for forwarding to the rotational EOD unit and DTOC.**

3. **EOD Support. During rotation, the rotational EOD company in support of the BCT will conduct a recon of ordnance items to evaluate and determine if they are live or training and determine what hazards exist. The rotational EOD unit is NOT authorized to reduce live ordinance. If the rotational EOD unit determines that the ordnance encountered is to be destroyed. Unit will construct protective works if required. Information on all items destroyed or not destroyed by the rotational unit will be forwarded to the post EOD unit at the end of the rotation by the sidewinder 18 team.**

13-13 Ammunition

1. **Definition. Ammunition is defined as all munitions (explosive or otherwise), pyrotechnics, chemical agents, powder, and firing devices other than weapons; e.g., HOFFMAN/ MGSS charges and ATWESS charges. Storage. The ammunition supply point (ASP) is the only authorized permanent ammunition storage site on the installation. Field ASP/ATHP sites and use of CONEX containers will be governed by appropriate regulations and restrictions provided by NTC DCL. Blank and Live Separation. Blank and live ammunition will be separated by the maximum extent possible. Blank and live ammunition will NOT be stored on the same pallet. Blank and live ammunition may be stored on the same PLS flat-rack, but will be separated by space and/or a physical barrier. There will be a definite line of separation between blank and live ammunition during storage at all outdoor storage areas.**

2. **Ensure Soldiers have the appropriate level of training for the ammunition handling operations they are conducting.**

3. **Transportation. Blank and live ammunition may be transported on the same vehicle, but must be separated prior to issue. Handling.Hazard. Soldiers have been seriously injured by improper handling of blank ammunition, smoke grenades, signal devices, and explosive simulators. Risk Reduction. Units will follow the procedures and rules: DO NOT conduct tactical training or fire any ammunition or pyrotechnics in the cantonment area without written permission from the Garrison Commander. Units using non-standard marking ammunition systems must follow marking ammunition systems manufacturer's safety procedures, the individual weapons user's manual, and the range safety regulations and standard operating procedures. Failure to comply with established operational and safety standards could result in weapon damage and/or personnel Injury. Inspection and subsequent weapon maintenance must be performed when utilizing marking ammunition. Improper ammunition handling or improper weapon maintenance can cause man marking projectiles to become lodged in- bore. Blown weapon incidents have occurred when service ammunition was fired through weapons that had a man marking projectile lodged within the bore without first checking to ensure that the bore was clear. Units are responsible for ensuring the involved service weapons are properly cleaned and inspected after being converted back to service use. Do not fire weapons requiring ATWESS charges without first clearing the back blast area.**

4. **During limited visibility conditions, do not intentionally fire weapons directly at airborne helicopters that are within 500 meters. Pilots using NVGs will be blinded.**

5. **Do not intentionally discharge any pyrotechnic simulators within 50 meters of helicopters under any circumstances. Additionally, no pyrotechnics will be fired at or near any aircraft in flight (i.e. star clusters, flares, etc.). Observe safe separation distances from unprotected personnel at all times when employing pyrotechnic simulator devices. These devices must not be activated in loose gravel, sticks, or other materials that are subject to projection. Lesser safe separation distances are acceptable for protected personnel. Protected personnel are those protected by suitable cover, such as within armored vehicles, in buildings, in dug-in emplacements, etc. in addition, personnel would normally be considered protected where the simulator is separated from personnel by masking terrain or is detonated within a designated barricaded pit or area. Do not remove gunpowder from pyrotechnics. This explosive powder is volatile, and will cause injury to include, but not limited to, second and third degree burns, permanent or partial dismemberment, and blindness when ignited. Do not use pyrotechnics around flammable liquids or materials. Refueling should be at least 100ft from the AHA. Ensure pyrotechnic devices are transported in the appropriate inner and outer shipping containers.**

6. **Do not activate pyrotechnic devices inside vehicles.**

7. **Turn-in. Upon the completion of your exercise, return all ammunition, components, and residue to the ASP. Company/Troop Commanders will complete and sign the required "Download Certification Memorandum" and provide to their counterpart. Thorough shakedown checks of personnel and equipment are critical in ensuring that ammunition is turned in correctly. Amnesty boxes are located throughout the cantonment area, as an additional safety measure; however these are not Class V turn in points. The placement of ammunition in trash containers, chemical toilets, buried underground, etc., is strictly prohibited.**

13-14 Laser Device Operations

1. **Hazard. The MILES is an eye-safe system and is not considered hazardous under training conditions at the NTC and Fort Irwin. Unfiltered laser range finders/designators are not eye safe. Lasers will be treated as direct-fire weapons. Risk Reduction. Unfiltered Lasers. Unfiltered laser range finders or designators are prohibited during Force-on-Force operations (STX and FOF).**

2. **Tank LRFs. All tank laser range finders require the attachment of an ESSLER eye safe system during Force-on-Force operations, or contain eye-safe laser range finders.**

3. **Eye-Safe LRFs. M2A2 ODS, M2A3 BFV, M1A2, and M1A2 SEP equipped with the eye-safe Laser Range Finders may be used during force-on-force.**

4. **Aiming Lights. Infantry Aiming Light, Infrared (AN/PAQ-4) is eye-safe and can be used during Force-on-Force. However, hand held and vehicular mounted laser range finders and designators (AIM-1, GCP) are prohibited during force-on-force operations. AN/PEQ-2s are also considered non eye-safe.**

5. **MELIOS. MELIOS and MELIOS w/CVAM devices will replace AN/GVS-5s in force-on-force operations.**

6. **Airborne IR Lasers. During force-on-force training, the ACP-2, ACP-2A, and LITENING II pod (IR Marker) airborne IR lasers may be employed over ground personnel as long as the aircraft remain above 10,000 feet AGL and are actively monitored via the Air Warrior Measurement and Debriefing System (AWMDS) by the Raven Team and/or via active RADAR by CT-OISdance. If the aircraft drop below 10,000 feet AGL, laser operations will be terminated by Raven white cell.**

7. **Mark VII LRF. The Mark VII Laser Rangefinder may be used by Tactical Air Control Parties during Force-on-Force operations under the supervision of an Observer-Controller.**

13-15 Carbon Monoxide Poisoning, Toxic Smoke, and Fumes

1. **Hazard. A number of systems/devices produce toxic fumes on the NTC battlefield. Many of these are difficult to detect or have delayed effects.**

2. **Risk Reduction Measures.**

    a. **Fuel Burning Heaters, Stoves, Generators. Commanders will ensure that only authorized tent heaters are utilized at the NTC. Units will not use commercial off-the-shelf or locally purchased heaters in lieu of available type classified Army equipment, except: Acquisition of commercial off-the-shelf heaters is justifiable only in mission-critical circumstances. In those cases, units will obtain equipment meeting the requirements of a national standards organization, such as Underwriters Laboratories, American National Standards Institute, the International Standards Organization, or the National Fire Protection Association. Personal (individually owned) heaters are not authorized for use in Army operations. Do not operate generators, heaters, or gas burning stoves in poorly ventilated areas. Someone must be awake while heaters are being used.**

    b. **Sleeping in Vehicles. Sleeping in parked vehicles with the engine heater or externally mounted generator running is prohibited. Only authorized heaters will be used to heat vehicles. When vehicle heaters are used, hatches/windows will remain partially opened to allow circulation and to prevent carbon monoxide poisoning.**

    c. **Signs and Symptoms of Poisoning. Be alert for symptoms of carbon-monoxide poisoning. The early symptoms of carbon monoxide poisoning often are mistaken for the flu. Symptoms include headache, dizziness, weakness, nausea, vomiting, sleepiness and confusion. Breathing very high concentrations of carbon monoxide can be lethal in minutes.**

    d. **During Chemical Attacks. All personnel will wear their protective masks during (CBRN) chemical attacks.**

    e. **Fog Oil Use The smoke produced by tracked vehicles and smoke generators using fog oil is toxic. Soldiers exposed to this hazard will don protective masks.**

    f. **HC Smoke Exposure to HC smoke from AN-M8 white smoke grenades or smoke pots (HC smoke) or metallic powder obscurants can cause long term health effects and death in confined spaces. OC/T's will use common sense when deploying smoke and will avoid deploying smoke within the close confines of Military Operations Urban Terrain (MOUT). Anytime exposure to smoke produces breathing difficulty, eye irritation, or discomfort in one individual will serve as a signal for all similarly exposed personnel to evacuate the immediate area. The exact nature of the smoke inhalation, namely HC white smoke, should be brought to attention of medical personnel.**

13-16 MEDEVAC Procedures

1. **General. Rotational units are expected to evacuate casualties IAW their unit's SOP. The rotational unit chain of command is responsible for insuring that the MEDEVAC frequencies and procedures are known by all soldiers.**

2. **Unit Information. C/2916th Aviation (Air Ambulance) provides aeromedical evacuation and Weed Army Community Hospital, in conjunction with the NTC Fire Department, provides ground medical evacuation to all units training at the NTC for ACTUAL URGENT MEDICAL EMERGENCIES affecting the loss of life, limb, or eyesight. Requests for MEDEVAC HELICOPTER and use of NTC ground ambulance exchange/transfer points will be called directly to Fort Irwin Range Operations on FM frequency 38.90 (single channel/plain text), VHF 126.20, UHF 241.00, or NIPR (760) 380-**

3637/3878 using the NATO 9-line MEDEVAC request format including MIST. Requesting element will remain in contact with Range Operations until MEDEVAC is complete.

3. **OC/Ts are trained in MEDEVAC procedures and will assist units experiencing difficulty requesting MEDEVAC using RCS Group 295. OC/T on-site will provide an initial report to Team 07 and perform life-saving measures with RTU medics. Ensure that a physician is requested if there is a possibility of a fatality. Secure site for possible investigation and establish the HLZ if the RTU is unable. Report status of MEDEVAC to TAFF and keep Team 07 informed of patient status. Team 07 will provide an overall report to the COG once the patients are evacuated. Team TAFF will send an NTC Safety Incident Report upon completion of Team 07 updates.**

4. **Helicopter Landing Zones. Pilots may reject LZ and land elsewhere. Remain available on specified frequency. Do not use ground guides to assist in landing aircraft. Sites should be as flat as possible. If "H" pad is nearby, use it. Pick an area that is free of large rocks, brush, commo wire, and barbed wire.**

5. **Use of smoke (red) is the preferred method of marking the LZ during daytime. Only pop smoke once requested by the pilot.**

6. **Use of twirling (buzzsaw) chemlite at the end of a 3 foot piece of rope is the preferred method of marking the LZ during night time. Use only orange, white, red, or IR chemlites. Crews use NVGs on all night missions. Turn off all vehicle lights while aircraft is on approach. Only use a star cluster (red) upon request from the pilot.**

NATO 9-LINE MEDEVAC REQUEST				DTG Received:	Unit Received From:
P: FM 38.90 SC/PT	A: RCS GROUP 295	C: VHF 126.20 / UHF 241.00	E: NIPR (760) 380-3637 / 3878		
1	LOCATION (GRID OF PICKUP ZONE)				
2	CALL SIGN & FREQUENCY				
3	NUMBER OF PATIENTS/PRECEDENCE				
	A – URGENT; to be at hospital facility (R2 or R3) within 60 minutes of the first notification (P1)		B – PRIORITY; to be at hospital facility (R2 or R3) within 4 hours of notification by "9-line" (P2)		
	C – ROUTINE; to be at hospital facility (R2 or R3) within 24 hours of notification by "9-line" (P3)				
4	SPECIAL EQUIPMENT REQUIRED				
	A – NONE	B – HOIST (Winch)	C – EXTRICATION	D – VENTILATOR	
5	NUMBER TO BE CARRIED LYING/SITTING				
	L – LITTER (Stretcher)	A – AMBULATORY (Walking)	E – ESCORTS (e.g. for child patient)		
6	SECURITY AT PICKUP ZONE (PZ)				
	N – NO ENEMY		E – ENEMY IN AREA		
	P – POSSIBLE ENEMY		X – HOT PICKUP ZONE – ARMED ESCORT REQUIRED		
7	PICKUP ZONE (PZ) MARKING METHOD				
	A – PANELS	B – PYRO	C – SMOKE	D – NONE	E – OTHER (explain)
8	NUMBER OF PATIENT BY NATIONALITY/STATUS				
	A – COALITION MILITARY		B – CIVILIAN WITH COALITION FORCES		
	C – NON-COALITION SECURITY FORCES		D – NON-COALITON CIVILIAN		
	E – OPPOSING FORCES/PW/DETAINEE		F – CHILD		
9	PICKUP ZONE (PZ) TERRAIN/OBSTACLES				
DO NOT DELAY LAUNCH OF MEDEVAC – SUPPLY FURTHER INFORMATION ONCE AVAILABLE					
M	MECHANISM OF INJURY (and at what time if known)				
I	INJURY OR ILLNESS SUSTAINED				
S	SYMPTOMS AND VITAL SIGNS A – airway B – breathing rate C – pulse rate D – conscious/unconscious E – other signs				
T	TREATMENT GIVEN (e.g. tourniquet and time applied, morphine)				
NOTES:					
Specify if critical medical supplies are needed to be brought in with MEDEVAC "9-line" is not used for request to move casualties who are killed in action at the scene					
ISAF APRV'S MSN		AVN AUTH'S LAUNCH			
W/U	W/D	W/U	W/D		

NATIONAL TRAINING CENTER HELICOPTER LANDING ZONES		
IDENTIFIER	DESCRIPTION	GRID LOCATION
ASP	ASP HELIPAD	11S NU 29500 98050
BAB	BICYCLE LAKE ARMY AIRFIELD	11S NV 33140 03140
C2	C2 FACILITY HELIPAD	11S NV 47660 26920
CL	CHAH-E LANGFORD / GUBA HELIPAD	11S NU 35374 96974
ES	ERTEBAT SHAR / UJEN HELIPAD	11S NV 36770 11862
JDL	JAHEL DAR LAD-E / DEZASHAH HELIPAD	11S NV 21618 19455
LF	LIVEFIRE BUNKER HELIPAD	11S NV 46532 27614
LSA	LSA WARRIOR / GARDAKERT HELIPAD	11S NV 30465 01768
MIA	FOB MIAMI / NAJALABAN HELIPAD	11S NV 58821 05396
MPH	MAIN POST HELIPAD	11S NV 28440 02689
SDJ	SHARQ DARWAZA JAME'A / BARASU HELIPAD	11S NV 59162 15924
ST	SHAR-E TIEFORT / RAZISH HELIPAD	11S NV 44085 10079
ZUL	ZULU TOC HELIPAD	11S NV 49540 29360
NTC GROUND AMBULANCE EXCHANGE/TRANSFER POINTS		
AXP BICYCLE LAKE	MSR Bull Run light line (Barstow Road)	11S NV 31633 05139
AXP LANGFORD LAKE	Long Island light line (Langford Lake Road) IVO Building 851	11S NU 31662 97812
AXP GOLDSTONE	NASA complex (Goldstone Road & Pioneer Road)	11S NV 12207 13324
AXP PAINTED ROCKS	IVO Painted Rocks on Fort Irwin Road	

13-17 Serious Incident/Emergency Situation Procedures

1. **Red Pyrotechnics. Red pyrotechnics are only used to signal an actual emergency. Red Smoke / Red Star Cluster. A red star cluster or red smoke signifies that an emergency situation or a serious accident has occurred. All personnel and equipment will halt movement and cease all live fire activities until directed to resume operations.**

2. **Personnel. Actions Personnel not required for MEDEVAC procedures will relocate or avoid coming within 500 meters of the MEDEVAC site and continue training or resume training as soon as MEDEVAC is completed.**

13-18 Serious Incident Reports

1. **General. Rotational units will report the following incident through the rotational chain of command to the 52ID/ X Corps TOC and to unit observer controllers. Any accident involving personal injury or vehicle damage. Any vehicle fire or flarebacks. Any damage to the weapon system due to firing. Any accident involving petroleum, ammunition, pyrotechnic, or demolitions. Any other emergency or unusual incident which could have caused injury, severe damage, or loss of life. Improper target ID and engagement. Any unexploded ordnance.**

13-19 Off-Limits Areas

1. **General. Refer to Chapter 1. The following areas are off-limits to all rotational unit personnel, equipment, and activities in the Live Fire area of operations:**

2. **No Fire Areas. Rotational unit personnel and equipment are allowed within 25 meters of the structures within the following NTC No Fire Areas (NFAs): NFAs 06, 07, 09, 10, 11, 12, 13, 15, 16, 18, 22, and 25.**

3. **Dry Lake Beds. Drinkwater Lake (NV424283), No Name Lake (NV473218), Nelson Lake (NV204208), Red Pass Lake (NK583028), Leach Lake Area (North of E-W Grid NV33).**

4. **Live Fire Operations Bunker. The bunker located at NV475273, antenna/camera sites, OC/T Command Posts, and OC/T field support sites are all off limits. Exceptions granted only when specifically directed by an OC/T.**

5. **Targetry. Target pits and demolition pits are off limits.**

6. **Marked Sites. Archaeological sites which are areas marked with single strand barbed wire cattle fence and tactical warning signs, as well as any area which has a sign posted 'Off Limits to Rotational Personnel and Equipment'.**

13-20 Common Missile Warning System (CMWS)

1. **All Flight and FARP OC/Ts will familiarize themselves with all appropriate Warnings, Notes, and Cautions associated with the Common Missile Warning System (CMWS) and the use of Infrared Countermeasure (IRCM) flares. Fort Irwin Cantonment Area/Main Post Helipad (MPH). CMWS equipped aircraft with IRCM flares installed requiring access to the Main Post Helipad (MEDEVAC or AMR (for passenger pick-up/drop-off)), will be approved on a case-by-case basis by Eagle 07 prior to execution. Aircrews will ensure aircraft armament systems (including ASE) are placed on SAFE and prior to joining "Green Route" in vicinity of the Fort Irwin Cantonment Area and will inform Desert Radio of this status. CMWS equipped aircraft operating on SAAFR "Green Route" will request special routing through Desert Radio and remain a minimum of 500m outside the published "Green Route" when transiting the Cantonment Area. Additionally, CMWS equipped aircraft will remain a minimum of 1000m from any Ammunition Supply Point (ASP/FASP).**

2. **Arrival and Departure Procedures. As determined by aircraft configuration and Unit SOP, set cockpit switches as appropriate prior to entering / exiting the operations area.**

3. **Aircraft Parking. While aircraft are parked at BLAAF or the RTU TAA between missions, the aircraft armament systems (including ASE) must be placed on SAFE and safety pins installed. Further, the payload modules will be removed and stored in proximity of the aircraft, but out of direct sunlight.**

4. **When conducting face-to-face coordination with a supported ground unit, the aircraft will land a minimum 200m away from ground personnel/vehicles. The payload modules may remain installed, with the aircraft armament systems (including ASE) placed on SAFE and safety pins installed.**

5. **If the aircraft is on Quick Reaction Force (QRF) status, the aircraft will be repositioned to a designated "Alert Area" at least 100m away from other "Non-QRF" personnel / aircraft or FARP operations. The payload modules may be installed, with the aircraft armament systems (including ASE) placed on SAFE and safety pins installed. Only emergency radio transmissions will be made from portable radios within 100m of the "Alert Area."**

6. **Proximity to Ground Forces. Aircraft will never approach, over fly, or land within 100m of Soldiers or vehicles. Aircraft must land down-wind from Soldiers when possible.**

7. **Use of Flares. The discharge of live or simulated self-protect flares from aircraft operating within the R-2502 is authorized within approved tactical maneuver areas only during missions controlled by an OC/T. The ACA may restrict the use of flares based on ground hazards. Fixed wing aircrews will refer to Air Force Instruction 11-214 - "Range Planning and Operations," for restrictions and limitations concerning the use of self-protect flares. The use of other aircraft discharged flares will be coordinated with the appropriate ACA at least twenty-four (24) hours prior to the actual mission.**

8. **Armed Aircraft Procedures. No helicopter arming operations will be conducted at BLAAF. Range 18 will be utilized for uploading Hellfire missiles and CMWS flares only. Helicopters with an in-flight weapons systems malfunction or gun jam will return to the unit's arming pad (FARP) site to be de-armed or cleared by certified unit personnel.**

9. **If a loaded weapon systems or jammed gun cannot be cleared after following the unit SOP, the unit will notify Ft. Irwin Range Operations. Range Operations will aid unit to get additional assistance or local EOD personnel support to correct the problem.**

10. **Armed aircraft will NOT operate or land at BLAAF unless there is an emergency requiring a roll on/running landing. If the emergency requires use of BLAAF, the aircrew will contact Desert Radio AIC to coordinate Ft. Irwin's Fire Department response. Use runway 13 primarily, winds dependent, in order to orient weapons system toward Tiefort Mt. and minimize risk in case of weapon discharge. When using runway 31, if possible turn the aircraft toward Tiefort Mt. prior to shutting down.**

11. **Refueling Procedures.**

    a. **Hot Refueling. Aircraft will land at the RTU FARP and comply with their SOP requirements. Aircraft armament systems (including ASE) must be placed on SAFE and armament/CMWS safety pins installed prior to conducting refueling operations. Only emergency radio transmissions will be made. During night operations, the position lights will remain on STEADY BRIGHT. The Fire Guard will be positioned to see both the pilot and refueler. Fire guards will not pressurize fire extinguishers unless there is an emergency. Passengers will marshal in designated areas. No passenger or crew changes**

are authorized on refuel pads; these activities shall be accomplished elsewhere. No other personnel should approach the refuel area while an aircraft is present.

b. Cold Refueling. Aircraft armament systems (including ASE) must be placed on SAFE and armament/CMWS safety pins installed prior to conducting refueling operations. Additionally, when CMWS is installed the unit will comply with Section 14-13, Aviation Operations of the EXOP at all times with regards to the aircraft being "Armed."

Chapter 14
Live Fire

14: Live Fire Operations
14-1: Area of Operation (AO) Dragon and Live Fire Overview
14-2: Planning for Live Fire Operations
14-3: Preparing for Live Fire Operations
14-4: Executing Live Fire Operations
14-5: Ultimate Training Munitions

14-1: AO Dragon and Live Fire Overview

1. **Dragon Team Mission Statement. Dragon Team facilitates Platoon to Brigade Level Live Fire Operations, Rotational Improvements, and Individual / Collective Training at the National Training Center (NTC) in order to (IOT) facilitate Operation Group's (OPS GRP's) development of adaptive leaders and trained units to support the Army Campaign Plan and sustain the relevance of OPS Group Observer Coach Trainers (OC/Ts).**

2. **Overview of Live Fire. AO Dragon encompasses over 1,000 square kilometers and contains over 1,500 target lifters. These targets are positioned throughout the entirety of AO Dragon to replicate individual observation posts and Platoon-sized elements up to a Division Tactical Group (DTG). The target groupings facilitate the integration of Army and Joint enablers allowing the Rotational Training Unit (RTU) to achieve the most realistic Combined Arms Live Fire Exercises (CALFEX) short of combat.**

3. **Governing Regulations. Live Fire Exercises (LFX) are tactical missions conducted in accordance with (IAW) an Operations Order (OPORD), AR 385-63, and DA PAM 350-38. Surface Danger Zones (SDZs) IAW DA PAM 385-63 must be enforced for all weapon systems during all live fire events. The NTC Commanding General has authorized certain portions of some SDZs to be reduced from the requirements listed in DA PAM 385-63. These deviations are reviewed and approved each fiscal year and can be found in Chapter 14's ANNEX A: Fiscal Year Deviations. The Dragon Team will provide the rotational units with current NTC-approved SDZs to use during planning.**

4. **Live Fire Focus. The current focus is on Company level and Task Force (TF) level LFXs. Live Fire is structured to support conventional Live Fire Exercises on 15 different Objectives and one Aerial Objective. These Objectives can be found in ANNEX B: AO Dragon Maps and Aerial Overhead Imagery. Companies execute one or a combination of these missions based on the brigade commander's training objectives:**

    a. **CALFEX 1: Alpha/Bravo Pass (Movement to Contact, Combined Arms Breaching, Enter and Clear a Trench, Enter and Clear a Building, Defend against a Counterattack)**
    b. **CALFEX 2: Refrigerator Pass (Movement to Contact, Combined Arms Breaching, Enter and Clear a Trench, Enter and Clear a Building)**
    c. **CALFEX 3: Challenger Canyon (Movement to Contact, Enter and Clear a Trench, Enter and Clear a Building, Convoy Live Fire)**
    d. **CALFEX 4: Drinkwater to Leach Lake (Movement to Contact, Combined Arms Breaching, Enter and Clear a Building, Defend against a Counterattack)**
    e. **CALFEX 5: Alpine Valley (Movement to Contact, Combined Arms Breaching, Enter and Clear a Building, Defend against a Counterattack)**
    f. **CALFEX 6: GarryOwen (Helicopter Door Gunnery, Close Combat Attack [CCA])**
    g. **TF East: Combination of CALFEX 1 & 2 (Can be conducted simultaneously with TF West)**
    h. **TF West: Combination of CALFEX 3, 4 & 5 (Can be conducted simultaneously with TF East)**
    i. **Brigade Combat Team (BCT): Maneuvers across AO Dragon from CALFEX 1 through CALFEX 5**

List of References:
AR 385-63
ARTEP 44-117-11
ARTEP 44-117-21
CTA 50 900
DA PAM 350-38
DA PAM 385-63
FM 3-09.32
FM 3-20.21 (HBCT Gunnery, 2009)
FM 3-21.8
FM 3-22.9
FM 3-22.10
FM 3-22.27
FM 3-22.31
FM 3-22.65
FM 3-22.68
FM 3-23.30
FM 3-23.35
FM 6-50
TC 3-09.8

14-2: Planning for Live Fire Operations:

1. **LFX Training Requirements: The Dragon Live Fire Team is capable of training rotational units in both Mission Rehearsal Exercises (MRE) and Task Force Decisive Action (DA) Operations. The NTC MRE and DA are tactical scenarios conducted during LFX Situational Training Exercise (STX) that are normally executed after a leader's recon and a required full mounted rehearsal conducted during the day. At the confirmation of the covering OC/T Team and the Dragon LFX OC/T, the rotational unit transitions to conduct a day live fire. There is no requirement to conduct a night full mounted rehearsal because the rotational unit will conduct a day full mounted rehearsal. Unit Commanders have the authority to conduct Enter and Clear a Building and Trench during the full mounted rehearsal IOT validate subordinate element proficiencies. Units must arrive at the NTC with highly trained Soldiers to successfully and safely execute live fire. Rotational units are required to meet all qualification requirements prior to occupying a LFX lane in order to ensure the maximum training time during CALFEX.**

2. **For Brigade or Battalion-level Combined Arms Live Fire Exercises, the Brigade must conduct a minimum of a Battalion STX and Company level live fire within six months of NTC rotation. Upon publication by the Armor Center of the Fire Control Exercise Manual, a brigade will be required to conduct a fire control exercise from the highest HQ conducting live fire down to the Platoon Leader level.**

3. **Night LFX Requirements: Unit must borelight their weapons NLT the evening before LFX and be verified by the team OC/T. The exception to borelighting requirements is the PEQ-15. All automatic weapons must have a boresighted laser or night optic no later than (NLT) the evening before LFX and verified by the team OC/T. All crew served weapons must use thermal optics and/or demonstrates proficiency at identifying targets at maximum effective range while using illumination in their night iteration. All targets in live fire will have a thermal signature. Units must successfully complete a Combined Arms Rehearsal, full dress rehearsal, and a day LFX prior to night LFX. Units will use either tactical-lights or laser and Night Vision Goggles (NVG) combination when operating in urban areas. Units will execute night LFX with the same target array as the day run. Unit must provide its own targetry to meet prerequisites for night zero and confirm if shooting in live fire area. Coordination will be made through ZULU TAC for firing location in the vicinity of the Arrowhead.**

4. **Live Fire Restrictions: Body Armor. All Soldiers will deploy to the National Training Center with body armor per CTA 50 900. Soldiers will wear IBAS with SAPI plates during all live fire events. During defensive operations, Soldiers will put on body armor not later than one hour prior to the defend time as specified in the OPORD. During offensive missions Soldiers will put on body armor not later than one hour prior to the earliest element's Line of Departure (LD) time.MILES. Vehicle and personnel MILES systems must work at all times in order to participate in Live Fire Operations. The MILES kill capability is used both as a safety control measure and to enhance combat realism. Firing on the Move. No weapons will be fired on the move except from stabilized firing platforms. Non stabilized weapons will be required to use Traverse and Elevation (T&E) Mechanisms.**

5. **Night Fire. Night Fire at NTC will occur only with appropriate thermal or night optics mounted to the weapons on a vehicle platform or tripod in accordance with FM 3-20.21. Targetry at NTC is at ranges greater than can be identified with NVGs. All targets emit a thermal signature representative to the threat vehicle. Due to Positive Identification (PID) requirements, NVGs with a laser is not an approved targeting system.**

6. **Stryker, Tanks and Bradley Fighting Vehicles. There will be no firing unless turret stabilization is on and functioning. Tanks will not fire main guns or have rounds chambered on the move unless turret stabilization is on and functioning.**

7. **Stryker Vehicles. Strykers will not be allowed to fire Remote Weapon Systems (RWS) unless it is equipped with a stabilized firing platform. Firing from hatches will be controlled and accurate. No suppressive fire allowed from a moving platform.**

8. **Firing over the Head of Troops. Direct fire weapons will not fire overhead of troops. This restriction includes MILES systems. Mortars must be positioned so that they do not fire overhead of troops IAW AR 385-63. The one exception for Mortar overhead fire is 120mm carrier mounted mortar systems, in which the deviation has been approved by the Commander of Operations Group (COG).**

9. **NFA & SDZ Violation Authority. During Live-Fire Operations, the NTC Commanding General withholds authority to violate No Fire Areas (NFAs) and SDZs.**

10. **Training Requirements to Complete at Home Station. The following is a list of training requirements by echelon that should be accomplished at home station prior to arrival at the National Training Center.**

11. **Individual Training Requirements. Individual Weapons. Soldiers who will fire their individual weapons during live fire must qualify within 6 months of the NTC rotation. Qualification must be IAW STRAC and the appropriate TC.**

    a. **M4 / M16 Qualification Standards. FM 3-22.9. Must complete record qualification / DA Form 3595-R (page 6-13, digital page 167), or the Alternate Qualification Course / DA Form 5789-R (page 6-16, digital page 170).**

    b. **M9 Qualification Standards. FM 3-23.35. Must complete the Combat Pistol Qualification Course / DA Form 88-R (page A-1, digital page 57).**

    c. **Crew Served Weapons. All crews must qualify with their weapon system within 6 months of the NTC rotation IAW appropriate FM. If qualification was conducted using a tripod, but weapons will be fired from a vehicle mount, then a live fire familiarization exercise must be conducted utilizing that type of mount prior to live fire. This can be done at the NTC during RSOI or during the live fire transition period, if necessary. Units not equipped with the M2A1 HB .50 cal must set headspace and timing IAW the appropriate TM, and conduct**

a test fire at the NTC prior to conducting live fire operations. This test fire may be conducted either during RSOI or during the live fire transition period.

i. **Unstabilized Qualification Standards. FM 3-20.21.**

ii. **Qualified Gunnery Table (GT) VI on specific platform and weapon system. If qualification was done on a tripod, crew must conduct familiarization fire.**

d. **.50 Cal Dismounted Qualification Standards. FM 3-22.65 CH 5:**

i. **Table II Day Qualification / DA Form 7449-R (page 5-47, digital page 113).**

ii. **Table IV Night Qualification / DA Form 7451-R (page 5-54, digital page 120).**

iii. **M240B Dismounted Qualification Standards. FM 3-22.68 CH 4.**

iv. **Table I, II & III / DA Form 85-R (page 4-49, digital page 197).**

v. **M249 Dismounted Qualification Standards. FM 3-22.68 CH 5: Table I, II & III / DA From 7304-R (page 4-72, digital page 220).**

vi. **MK-19 Dismounted Qualification Standards. FM 3-22.27 CH 4: Table II Day Qualification / DA Form 7520-R or DA Form 7518-R (page 4-29, digital page 91).**

vii. **Table IV Night Qualification / DA Form 7519-R or DA Form 7521-R (page 4-31, digital page 93).**

viii. **Stryker Qualification Standards: FM 3-22.3/DA PAM 350-38**

ix. **Conducted Individual Crew Qualification within 6 months / DA Form 7527-R.**

x. **Weapons must be zeroed prior to LFX.**

12. **Shoulder Fired Munitions. All Soldiers employing these weapon systems must have a qualified gunner or crew who has passed the Gunnery Skills Test (GST) for the specific weapon within the past 6 months and conducted digital gunnery within the past 3 months.**

a. **TOW Qualification Standards. FM 3-22.34 (page 4-6, digital page 60).**

b. **GST with a GO on 70% of tasks (page 4-6, digital page 60).**

c. **GT VI for support of stationary units, GT VIII for support of maneuvering units.**

d. **AT4 Qualification Standards. FM 3-23.25, Table III Day Qualification & Table IV Night Qualification / DA Form 7677, (pages 2-36, digital page70).**

e. **Javelin Qualification Standards. FM 3-22.37 (pages 3-12, digital page 76).**

f. **Complete Javelin Gunner Course (JGC) (80 hour POI).**

g. **Pass Basic Skills Trainer (BST) with a minimum of 70% on all stations.**

h. **Pass Field Tactical Trainer (FTT) with a GO at all stations.**

i. **Receive a GO at range card prep.**

13. **Training Requirements for All Combat Vehicle Crews. All combat vehicle crews will train the following tasks IAW the appropriate vehicle TM and report completion to their OC/T after arriving at NTC.**

    a. **Vehicle fire evacuation drill.**

    b. **Vehicle rollover drill.**

    c. **Misfire procedures.**

    d. **Actions in the event of a flareback.**

    e. **View the no power thermal targets, compared to an M113 and M2 through the auxiliary, daylight, and thermal sights.**

14. **Stabilized Crews. FM 3-20.21. All crews must qualify through Table XII Platoon qualification IAW FM 3-20.21. TC/Gunner must have qualified together through this qualification. Non MOS specific substitutes may be used for loaders or drivers provided the Soldiers have passed the platform specific GST IAW FM 3-20.21 and require a written waiver approved by the Commander, Operations Group, NTC.**

    a. **M1 Qualification Standards. FM 3-20.21.**

    b. **Platoon Qualified GT XII (page 19-2, digital page 578).**

    c. **PL; PSG; CO-DIV CDRS must participate in a Fire Coordination Exercise (page 19-2, digital page 578).**

    d. **14-02.02.d.03: M2 / M3 Qualification Standards. FM 3-20.21.**

    e. **Platoon Qualified GT XII / DA Form 7658-R (page 19-2, digital page 578).**

    f. **PL; PSG; CO-DIV CDRS must participate in a Fire Coordination Exercise (page 19-2, digital page 578).**

    g. **Stryker MGS Qualification Standards. FM 3-22.3/DA PAM 350-38**

    h. **Conduct CGST, GT IV and GT VII within six months; Screen main gun and zero weapons NLT RSOI 4.**

    i. **Attack / Cavalry Helicopter Crew Training:**

        i. **Aerial Gunnery Training Requirements. Individuals must be aerial gunnery qualifiedIAW TC 3-04.45 (Gunnery Table VI) within twelve (12) months prior to Rotational Training Day 01 (TD01).**

        ii. **Table Training Requirements. All individuals identified to conduct live-fire exercises at the NTC will Participate in a collective live-fire exercise equivalent to TC 3-04.45 Gunnery Table IX within six (6) months prior to Rotational Training Day 01 (TD01).**

        iii. **Refresher Training Requirements. Immediately before deployment units must complete refresher training on all weapons systems.**

    j. **Aviation Live Fire Waiver Requirements:**

i. **Live-Fire Waiver Memorandum. The unit will complete and return the Live-Fire Waiver Memorandum, signed by the aviation task force commander, NLT RSOI 1 to Eagle 03/03A. An example of the memorandum is given in the 120-day letter.**

ii. **To participate in a CALFEX event, completion of aerial gunnery qualification (Gunnery Table VI) within twelve (12) months is mandatory – no waivers.**

iii. **Completion of a collective live-fire event for periods exceeding the previous six (6) months – waivers will be considered on a case-by-case basis.**

iv. **All air crews participating in maneuver live fire exercises must attend both the unit Combined Arms Rehearsal and the full mounted rehearsal to synchronize their execution within the maneuver plan.**

v. **Utility and Cargo Helicopter Door Gunnery Requirements. Assault and general support door gunners will qualify. IAW TC 3-04.45 (Chapter 8).**

vi. **Completion of Table VI, within six (6) months from Rotational Training Day 01 (TD 01) is mandatory for all door gunners in order to participate in a CALFEX – no waivers.**

vii. **Waivers for Pilots-in-Command (PC) who are not Table I qualified will be considered on a case-by-case basis.**

k. **Claymore Mines. FM 3-21.8 / TC 3-22.23. Soldiers must have conducted training on emplacing, arming and disarming claymore mines IAW TC 3-22.23 (M18A1 Claymore Munitions) within six months of the CALFEX execution. Each Squad must also have emplaced, armed and fired a live Claymore Mine to standard during a Squad or Platoon LFX within six months prior to the CALFEX execution.**

l. **Hand Grenades. FM 3-23.30. Soldiers must have negotiated a hand grenade course within six months IAW FM 3-23.30 and thrown a live grenade within one year of CALFEX execution. Soldiers unable to meet this standard may submit a waiver to use blue body's with fuses in dry runs to mitigate any risk, and then execute with live hand grenades.**

m. **Urban Breaching. Units wanting to execute explosive and ballistic breaching must coordinate through their OC/T counterpart and Dragon Team to ensure urban objectives are equipped to support live fire training.**

n. **Demolitions. FM 3-34.214. Training with live mines, demolition munitions, and Bangalore Torpedoes must be conducted within six months prior to LFX execution IAW FM 3-34.214.**

o. **Mine Clearing Line Charge (MICLICs). FM 3-34.214. Live rocket, inert charge fired within six months prior to CALFEX execution IAW FM 3-34.214.**

p. **Hellfire Lanes. Units desiring to conduct Hellfire lane training while at the NTC can contact Eagle03/03A NLT D-60. Hellfire lanes provide crews the opportunity to conduct live Hellfire engagements outside of STX Lanes in order to allow the unit the ability to train and conduct tactical engagements. Units must provide missiles from their home station STRAC allocation. Units will provide Eagle 03/03A with their Hellfire missile shoot concept NLT RSOI 01.**

q. **Mortar Crews. All mortar crews must successfully complete a LFX within six months. Armor Brigade Combat Team (ABCT) Mortar Sections must complete Table 8, Mortar Section Qualification (Live Fire), within six months. All mortar gunners must pass the Gunner Exam within six months.**

r. Mortar Fire Direction Center (FDC). All FDCs must successfully complete a LFX within six months. All FDC personnel, section leaders and squad leaders must pass the FDC Exam within six months.

s. Mortar Manning Requirements:

60mm Mortar	**3x 11Cs**
60mm Mortars Consolidated	**2x 11Cs per tube w/ 1x 11C NCOIC (5x total)**
81mm Mortar	**4x personnel (SL, GNR, AG must be 11C)**
120mm Mortar	**4x personnel (SL, GNR, AG must be 11C)**
FDC	**4x personnel (3x must be 11c)**

t. Air Defense (Live Stinger):

i. Man-Portable Air-Defense Systems (MANPAD) Qualification. MANPD Squads must qualify 4 of 5 hostile presentations using either Stinger Troop Proficiency Trainer (STPT) scenarios or Improved Moving Target Simulator (IMTS) scenarios within 12 months. Must have conducted and passed Stinger drills (ARTEP 44-117-11) within 3 months.

ii. Avenger / Linebacker Qualification: Avenger / Linebacker crews must qualify 4 of 5 hostile presentations using either STPT scenarios or IMTS scenarios within 12 months. Must have qualified on all Stinger drills (ARTEP 44-117-21) within 3 months.

iii. Other. For any weapon system not listed above, the Soldier or crew must be qualified IAW STRAC standards.

u. Collective Training Requirements:

i. Urban: Platoon Level LFX. All Soldiers who will fire during room clearing operations must have successfully completed Short Range Marksmanship (SRM) or Close Quarters Marksmanship (CQM) training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear rooms must have conducted the task, Enter and Clear a Room (07-4-D9509) under live fire conditions within the past six months.. Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. Platoons who will conduct LFX operations must have completed Squad level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

ii. Company Level LFX. All Soldiers who will fire during room clearing operations must have successfully completed SRM or CQM training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear rooms must have conducted the task, Enter and Clear a Room (07-4-D9509) under live fire conditions within the past six months. Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. Companies who will conduct LFX operations must have completed platoon level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

iii. Task Force Level LFX. All Soldiers who will fire during room clearing operations must have successfully completed SRM or CQM training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear rooms must have conducted the task, Enter and Clear a Room (07-4-D9509) under live fire conditions within the past six months. Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. TF who will conduct LFX operations must have completed company level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

v. Trench Clearing: Platoon Level LFX. All Soldiers who will fire during trench clearing operations must have successfully completed SRM or CQM training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear trenches must have conducted the task, Enter a Trench to Secure a Foothold (07-3-D9410) under live fire conditions within the past six months. Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. Platoons who will conduct LFX operations must have completed Squad level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

w. Company Level LFX. All Soldiers who will fire during trench clearing operations must have successfully completed SRM or CQM training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear trenches must have conducted the task, Enter a Trench to Secure a Foothold (07-3-D9410) under live fire conditions within the past six months.Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. Companies who will conduct LFX operations must have completed Platoon level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

x. Task Force Level LFX. All Soldiers who will fire during trench clearing operations must have successfully completed SRM or CQM training IAW either an approved home station program (e.g., local 350-series regulation) or FM 3-22.9 (FM 23-9), Rifle Marksmanship, Chapter 7, within the last six months. Squads who will clear trenches must have conducted the task, Enter a Trench to Secure a Foothold (07-3-D9410) under live fire conditions within the past six months. Units that do not meet this requirement will conduct a dry fire 25m SRM range prior to LD for Live Fire training. Battalions who will conduct LFX operations must have completed Company level live fire training IAW DA Pam 350-38 (STRAC) within the last six months.

y. Armored / Stryker / Infantry Brigade Combat Team Training Requirements. To conduct a BCT LFX each Battalion level equivalent is required to have completed a Company CALFEX and a Battalion level STX iteration.

z. Additional Warfighting Functions Training Requirements:

15. Fires (Field Artillery and ADA):

a. Field Artillery Training Requirements. All home station certifications, including safety and written tests, must be based on TC 3-09.8, Field Artillery Gunnery, November 2013.

i. Howitzer / Launcher Crew. Each section is required to have conducted Howitzer Tables V and VI within the past six months in accordance with TC 3-09.8.

ii. FDC Crew. All FDC personnel must pass the FDC exam within the past six months. Each section is required to have conducted Fire Direction Table III within the past six months.

iii. Observer Teams. Units must provide certified Observer Teams that have completed Fire Support Table I within the past six months to observe indirect fires.

iv. Field Artillery Manning Requirements:

M109A6 Howitzer	**4x personnel**
M119 Howitzer	**5x personnel**
M198 Howitzer	**7x personnel**
M777A2 Howitzer	**7x personnel**
MLRS / HIMARS	**3x personnel**
FDC	**4x personnel**

b. ADA Training Requirements:

i. No additional training requirements.

16. Combat Scenario. Live Fire engineer activities are to be conducted as if in battle. All engineer missions, whether mobility, counter-mobility, or survivability, will be conducted in as real a combat environment as possible.

17. Simulated Activities. No simulated engineer activities or effects are permitted during Live Fire. The intent of Live Fire is to allow the unit to realistically replicate combat engineer capabilities.

18. Improvised Explosive Device (IED) Reduction: Training Requirements. Units are <u>NOT</u> authorized to clear Unexploded Ordinance (UXOs) within Live Fire. Units participating in live fire operations while in rotation at the National Training Center are authorized to utilize Explosive Ordnance Clearance Agents (EOCA) and Route Reconnaissance/Clearance Operations – Sapper (R2C2-S) trained Soldiers to reduce IEDs when the following criteria have been met:

a. The Soldier or Leader has attended and graduated from the Explosive Ordnance Clearance Agent (EOCA) Course or The Soldier or Leader has attended and graduated from the Route Reconnaissance / Clearance Operations Course - Sapper (R2C2-S). The Soldier or Leader has conducted Demolitions certification / Recertification within 6 months of the end of the scheduled NTC rotation. Unit possesses the proper mechanical or robotics platforms for interrogation, identification and reduction charge placement; no manual approach authorized. The Soldier or Leader has conducted Robotics familiarization and certification for reducing charge placement.

<u>14-03: Preparing for Live Fire Operations:</u>

1. Master Gunner In-brief. The Dragon Team conducts an in-brief for rotational unit master gunners at 0900 hours on RSOI Day 1, at Building 599 in the Dragon classroom. This Master Gunner In-brief covers the requirements for Live Fire Exercises IAW DA PAM 350-38, Attendees will include unit Master Gunners (Company/Troop and higher), Operations Sergeants Majors, and Unit Ammunition NCO's. The briefing explains all aspects of Live Fire operations at the National Training Center to include but not limited to, screening/zeroing of major weapons platforms, zeroing of Crew Served Weapon Machine Gun Optics, plumb and sync of the M1A2, availability of training aides for gunnery, Ammunition requirements, OPORDS and GRAPHICS (Digital and

manual) for the standardized Live Fire STX lanes, and coordination of Points of Contact between Operations Group and the Rotational Training Unit for Live Fire Purposes.

2. **Target Effects Brief. The Target Effects Brief is provided to the rotational unit during the morning of their live fire training day by the Dragon Team OC/T. All rotational unit personnel who will execute live fire must be present during the brief. The purpose of the brief is to cover live fire safety, EXOP requirements, and to demonstrate the targetry and weapons effects used in live fire.**

3. **Live Fire Leaders Training Brief (LTP). This briefing is given to the rotational unit's BCT Commander, all Battalion Commanders, all Battalion S-3s/Assistant S-3s, and all Battalion FSOs. The briefing is held as part of LTP and is scheduled through the Wrangler Team conducted by Dragon 07. The purpose of the briefing is to review the Live Fire Exercise Operating Procedures and all live fire issues. Additionally, Battalion S-3s must be prepared to disseminate their unit's training objectives. Company Commanders will receive the same briefing during LTP by the CALFEX lane primaries, except with the addition of deconfliction of fires and small group analysis of their assigned STX lane.**

4. **Live Fire Safety and SDZ Planning Class. This briefing is given prior to a Hybrid Threat rotation to the rotational unit's BDE FSO, ALO, and S3/AS3 and Battalion S-3s/Assistant S-3s, Battalion FSOs, and Battalion ALOs. The briefing is conducted by the Dragon Team Master Gunner in the Dragon OC/T building (Bldg #599). This briefing occurs on RSOI 2 at 1530 hours. The purpose of the briefing is to distribute current SDZ packets and practice utilizing SDZs as part of the unit's planning process.**

5. **Screening / Zeroing during RSOI: Dragon OC/Ts receive confirmation from unit OC/T team of vehicles by crew that have successfully completed screen and zero procedures. In order to maximize training time available during LFX days, it is imperative that screening and zeroing is completed NLT RSOI 4.**

6. **Waiver Requirements. Units that want to execute live fire and have arrived at the NTC without meeting minimum live fire requirements must submit a waiver request not later than 1200 hours, RSOI 3 through their OC/T team for approval by the Commander, Operations Group, NTC. The live fire requirements are based on integration of weapons systems into a CALFEX. If a unit desires to shoot a weapon (TOW, MICLIC, Bangalore, etc.) for training on the system as a separate training event then the training needs to be requested. No waiver is required only approval and scheduling of the training.**

7. **Waiver Format Guidance. Waivers will be submitted to the covering OC/T team in a standard Memorandum For Record (MFR) format. The MFR is setup to be submitted from the Battalion Commander through the following:**

   BCT Commander
   OC/T Team 07
   Dragon 07
   Operations Group Safety Officer
   NTC Division S3
   Commander, Operations Group

8. **Waiver Citations. Waivers will include all appropriate references, to include the NTC EXOP (most recent). The waiver must include a thorough discussion of what requirement is being requested for deviation from the EXOP, what Unit / Crew / Soldier does the deviation apply to, all mitigation measures emplaced by the Unit (to include training prerequisites), and status of personnel upon meeting or not meeting mitigation measures. It is required to include Soldiers by name in the waiver. The POC for the waiver is the Battalion S3 and the signature block must be signed by the Task Force Commander. An example live fire deviation memorandum will be disseminated to the**

BCT leadership on disc during Pre Deployment Site Survey (PDSS) / LTP. The covering OC/T Team will be able to coach specifics required on the MFR to the rotational unit.

9. Live Fire Lanes:

a. Combat Patrol 1 and 2 (CALFEX 3). The Combat Patrol (convoy) Live Fire Exercise (CPLFX) are executed on the Hotdog lane and Drinkwater. They provide rotational units at the National Training Center a realistic urban live fire site enabling 360 degree operations which allows for training along the spectrum of operations from Urban Warfare to Major Combat Operations. The rotational unit conducts training with a minimum of 4 vehicles per serial and no more than 10 vehicles per serial. Maximum number of vehicles per iteration is 10 Vehicles with minimum of 3 person crew for firing vehicles.

b. QRF Lane (CALFEX 3). The Quick Reaction Force lane is conducted on the Hotdog Lane and is capable of supporting up to a company conducting Company level CALFEX.

c. Urban Operations / Limaville (CALFEX 2). The Urban Operations lane is focused on a Company execution of a Cordon and Search. Units must demonstrate a proficiency in their understanding of hot walls and how to mitigate risk.

d. Rural Live Fire (CALFEX 1). The Rural Live Fire Exercise provides rotational units at the National Training Center a realistic rural and urban live fire site which allows for a Company CALFEX lane that can incorporate any asset organic to a BCT along with most CCA and CAS munitions.

e. Cordon and Search (CALFEX 4). This lane provides the capability of a valley that provides adequate frontage for a mounted company to maneuver up to 10 KMS to a largely developed urban area. The village can accommodate up to a BN TFs participation in the breaching, isolating and cordon and search.

f. Alpine LFX (CALFEX 5). The Alpine lane is comprised of a primary urban village that is surrounded by multiple high ground positions and numerous micro-terrain locations that will promote rotational units adherence to sound movement and maneuver. This lane supports in depth execution on entering and clearing a building.

g. COP Defense (CALFEX 5). The COP Defense Live Fire Exercise provides rotational units at the National Training Center a realistic defensive scenario focused on support units and mortar platoons in a counter mortar role.

h. CALFEX 1. CALFEX 1 is a Full Spectrum Operations focused lane in Alpha Pass, Bravo Pass, and Echo Valley that allows for a Company CALFEX with breaching, trench clearing and Battle Drill (BD) 6 exercises while incorporating all organic assets in a BCT along with most CCA and CAS munitions. A hasty defense can also be incorporated at the end that incorporates the target bands across Echo Valley.

i. CALFEX 2. CALFEX 2 is a Full Spectrum Operations focused lane in Refrigerator Gap and Limaville that allows for a Company plus CALFEX with breaching, trench clearing and BD 6 exercises while incorporating all organic assets in a BCT along with most CCA and CAS munitions.

j. CALFEX 3. CALFEX 3 is a Full Spectrum Operations focused lane on the Hotdog and Challenger Canyon that allows for a Company CALFEX with BD6 exercises and trench clearing while incorporating all organic assets in a BCT along with most CCA and CAS munitions.

k. CALFEX 4 is a Full Spectrum Operations focused lane in Drinkwater Valley that allows for a Company CALFEX with screening operations, breaching, trench clearing and BD6 exercises while incorporating all organic assets in a BCT along with most CCA and CAS munitions. The lane provides adequate frontage for a mounted company to maneuver up to 10 kms to a largely developed urban area. A hasty defense can also be incorporated at the beginning of the lane prior to attacking that incorporates the target bands across Drinkwater Valley.

l. CALFEX 5. CALFEX 5 is a Full Spectrum Operations focused lane in Alpine Valley and Maynj Wola that allows for a Company plus CALFEX with obstacle belt reduction and BD6 exercises within the village, and attacking a strongpoint at COP 9, while incorporating all organic assets in a BCT along with most CCA and CAS munitions. The Alpine lane is comprised of the objectives being enclosed by multiple high ground positions and numerous micro-terrain locations that will promote rotational units adherence to sound movement and maneuver. This lane provides a great opportunity to use high angle mortar fires at varied elevations to replicate the terrain presented in theater.

m. CALFEX 6. CALFEX 6 is a Full Spectrum Operations focused lane in GarryOwen that allows for a Company (-) CALFEX with breaching and BD6 exercises while incorporating organic assets in a BCT up to the 120mm Mortar Firing System along with many CCA munitions. This lane provides a great opportunity to use high angle mortar fires behind IV lines utilizing UAS with OSRVTs/Rovers to observe rounds similar to practices used in theater.

10. DA Rotations TF/BCT CALFEX:

a. TF E: Combination of CALFEX 1 & 2 (Can be conducted simultaneously with TF W).

b. TF W: Combination of CALFEX 3, 4 & 5 (Can be conducted simultaneously with TF E).

c. BCT: Maneuvers across AO Dragon from CALFEX 1 through CALFEX 5

d. Risk Management. Units provide a detailed and comprehensive Risk Management Worksheet (RMWS) to the Dragon OC/T on the lane prior to the unit receiving a Red/Direct status. In addition to the environmental risks, the RMWS must address the tactical risks of the lane / mission that the unit is executing. The RMWS can be completed the evening prior and requires the signature from the appropriate authority.

11. Collective Rehearsal and Certification Requirements. Prior to conducting live fire room clearing, all Squads who will participate must rehearse (and be certified by their OC/T team) the task Enter and Clear a Room (07-4-D9509). Again, this rehearsal must be OC/T-observed. OC/T teams will validate that the unit's TTPs are IAW FM 3-06.11, Combined Operations in Urban Terrain, and that the unit is prepared to execute the task safely. This rehearsal is normally conducted during RSOI utilizing Range 13 on Outer Loop Road as well as the UO rehearsal site in the RUBA. If the unit is unable to complete certification during RSOI, it must occur in the desert prior to live fire utilizing an available built-up area.

12. Hot Wall Understanding. Unit Tactics, Techniques and Procedures (TTPs) and the unit CDR's plan must account for the fact that the walls of most built-up objectives cannot be counted on to stop bullets. Full SDZs remain in effect, except for certain approved 360 degree shoot houses. OC/Ts certification on clearing procedures will emphasize clearing buildings with non-ballistic building construction.

13. Soldier Discipline. Unit leaders at all levels must specifically emphasize muzzle awareness, safety/selector control, trigger finger discipline, and weapons control statuses.

14. **Target ID. Unit rehearsals must emphasize that positive target identification is required prior to engaging. Units must execute proper target discrimination and only identified enemy targets that may be engaged.**

15. **Non-Standard TTP Waiver Requirements. Units who intend to use clearing TTPs that differ significantly from those described in either FM 3-21.8, *The Infantry Rifle Platoon and Squad;* ATTP 3-06.11, *Combined Arms Operations in Urban Terrain* and Warrior University, *Infantry Battle and Crew Drills* must request a waiver.**

16. **Urban Breaching. Breaching plans must be coordinated in advance with the covering OC/T team, and approved through the covering Dragon team primary. Breaching may not be feasible due to many factors, including a need to limit damage to the objective, due to lack of time and resources available for repair, especially during rotations involving multiple iterations. Excessive damage to structures may result in the rotational unit being held financially liable for repair costs. All charges will be built and emplaced in accordance with table 7.3 of FM 3-34.214.**

17. **Ballistic Breaching. Use of the 12-gauge shotgun requires a written waiver in advance from the Commander, Operations Group. Individual must be qualified with his weapon and demonstrate proficiency in the task during dry rehearsals (as certified by an OC/T). Prior coordination must be conducted with the OPs Group NLT D-90 meeting.**

18. **Explosive Breaching. Explosive breach plans must be coordinated in advance, and the exact location, type, and size of each charge must be specifically approved through the covering Dragon OC/T. A detailed rehearsal is required, and must be observed and certified by a qualified OC/T. Preparation and emplacement of demolitions must be supervised by a qualified OC/T. The unit must obtain final clearance through the covering OC/T prior to initiating any firing device.**

19. **Mechanical Breaching. Must be coordinated in advance with the covering OC/T team, and approved through the covering Dragon team primary.**

20. **Collective Rehearsal and Certification Requirements. Prior to conducting live fire trench and bunker clearing, rotational squads and platoons must rehearse the following battle drill, Enter a Trench to Secure a Foothold (07-3-D9410) The company OC/T team must observe at least the portions of those battle drills relevant to the actual objective for that rotation. This certification is normally performed at the Dust Bowl Trench during RSOI and must be coordinated between the unit company commander and his covering OC/T team.**

21. **Laying Devices. The unit's aiming circles and M2 compasses will be declinated using declination stations. Unit must coordinate with Range Control during RSOI to get a declination station.**

22. **PCC/PCI. During RSOI, units must layout all Basic Issue Items (BII) associated with each mortar tube and conduct pre-fire checks and misfire procedures with OC/Ts present.**

23. **Additional Warfighting Functions:**

    a. **Fires Directives (Directives also apply to mortars).**

        i. **Fire Support Coordination Measures (FSCMs). Live fire has no predetermined firing points, range boundaries or predetermined safety data. All fires must impact north of the LFX Dud Effects Line. Areas for indirect fire impacts will consist of an area bounded by unit boundaries and fire support coordinating measures (both 52 ID and unit created). All indirect fires must be cleared by 52 ID DTAC (Warrior Fires) through an FDC OC/T.52 ID FSCMs. Units will receive all 52 ID FSCMs during RSOI; these include live fire. FSCMs must be loaded onto every AFATDS**

and copied on observer and Fire Direction Officer (FDO) analog maps prior to arrival in the live fire area.

24. Ammunition Restrictions:

a. Precision Guidance Kit (PGK). Overhead fires are not authorized. No personnel are permitted within the SDZ. Units must possess required equipment, COMSEC, and demonstrate correct procedures to employ near-precision munitions.

b. Excalibur and Guided Multiple Launch Rocket System (GMLRS). Units are required to use the reduced NTC SDZ, see Annex A for current NTC deviations. Units must possess required equipment, COMSEC, and demonstrate correct procedures to employ precision munitions.

c. Illumination. Range-to-fuse function is no less than 500m from friendly positions. Range-to-impact must comply with howitzer Minimum Safe Distance (MSD).

d. Rocket-Assisted Projectile (RAP). Rocket-on firing requires a clear zone short of the target area in case the rocket motor fails to function. Rocket-off firing also requires a clear zone beyond the target area to allow for unintended initiation of the rocket motor. 105mm RAP requires a clear zone of 4,000m short of and beyond the target, plus MSD. 155mm RAP requires a 6,000m clear zone short of the target, plus MSD. Rocket-off firing of 155mm RAP is unauthorized.

e. Improved Conventional Munitions (ICM) and FASCAM. ICM and FASCAM munitions and variations are not available from the Fort Irwin ASP. HE is authorized to replicate these munitions. Coordination is required through the Fire Support and Sustainment Teams for replication. The unit will paint the ammunition prior to leaving the ASP. The unit is responsible for providing the paint.

f. Colors for ICM and FASCAM Ammunition Replication:

155mm RAAM	**Red**
155mm ADAM	**White**
155mm DPICM	**OD Green**

g. Calibration. Howitzers must calibrate on RSOI 4 to support CALFEX operations.

h. ADA. No further requirements.

25. IED and UXO Reduction:

a. Memorandum signed by the Company Commander/Battalion Commander certifying EOCA/R2C2-S trained Soldiers' data (Memorandum must be submitted to corresponding Observer/Controller Team NLT RSOI 2 for verification and subsequent authorization for use during rotation):

i. Standard name-line of Soldier. Date Time Group (DTG) of EOCA/R2C2-S course graduation and EOCA/R2C2-S Course number (copy of EOCA certificate on-hand with HQ). DTG of latest demolitions certification/recertification (must be within 6 months of end of scheduled NTC rotation). DTG of robotics familiarization/certification; specifically addressing robotics system employment procedures and demolitions utilization/placement.

26. CAS: See 14-04.05.

27. Intelligence. Intelligence conditions and standards for live fire will be set and coordinated through Dragon Team. All MI assets, must be equipped with an operational man pack or under the immediate control of an OC/T while operating in the Live Fire area of operations. No unit will go forward of the Forward Edge of Battle Area (FEBA) without OC/T coverage.

28. Electronic Warfare (EW) Operations. EW operations may be conducted during live fire. EW operations will follow the established procedures used during Force-on-Force operations with the following exceptions:

a. Imitative Communication Deception (ICD) is not authorized during Live Fire operations.

b. 52ID DTOC is the approving authority for positioning of EW assets out of sector during Live Fire operations.

c. EW is not authorized against Tactical Air (TACAIR) during Live Fire operations. All TACAIR communications in Live Fire are BLUFOR/Friendly communications.

d. Target frequencies will be authorized through Division G6 via OPS GRP to de-conflict prior to jamming (JX).

e. Reporting. The Division Intelligence Support Element (DISE) will report all combat information and TACREPs to 52ID TAC during Live Fire operations.

29. LRSD. Long Range Surveillance Detachment (LRSD) operations in Live Fire will be planned by the 52ID TAC.

30. COEFOR Soldiers & COBs. Rotational units participating in Live Fire will ignore and avoid all NTC COEFOR/ COB Regiment personnel and activities. COEFOR Soldiers are never used in Live Fire. There is no simulated Enemy Prisoners of War (EPW) play or detainee operation in Live Fire. However, any captured enemy documents should be treated as such and passed through proper channels for potential exploitation.

31. COIN and Irregular Warfare-Focused Rotation. Enemy documents and equipment captured may be analyzed by Company Intelligence Support Teams. However, these items must be returned to OC/Ts prior to leaving the Live Fire area.

32. Decisive Action (DA) Training Exercise Rotation. Enemy documents and equipment captured may be analyzed by unit S2s. However, these items must be returned to OC/Ts prior to leaving the Live Fire area.

33. HR Operations:Strength Accountability. Each unit provides a battle roster to their OC/T counterpart before deployment from the Division Support Area. Each BN also provides a daily strength report showing personnel strength figures of their subordinate units to their OC/T. The breakdown for the Unit Strength Report is by officers, warrant officers and enlisted Soldiers, with totals. In addition, rotational units provide a 100% accountability report to the 52ID DTOC every morning at 0600. This is critical during live fire exercises. Failure to submit a report in a timely manner may delay training.

34. No One Forward Report: All OC/T TAFFs are required to send a daily No One Forward Report at 0700 to specify any OC/Ts who are in AO Dragon and not at their RTUs Tactical Assembly Area (TAA).

35. Logistical (LOG) Operations: Control of LOG Assets. Control of movement and activities of LOG assets will be by unit SOP and as directed by the 52ID TAC and BN OPORD.

a. **Clean-Up and Recovery. Recovery of all rotational unit-introduced materials and waste, Class IV and V residues in particular, filling in holes, and police of the entire Live Fire area is a rotational unit responsibility.**

b. **Authorized Simulators. ATWESS and Volacno are the only simulators authorized for usein live fire by roataional units.**

c. **Ammunition: Ammunition Temporary Holding Point (ATHP) Requirements at Transition Forward Operating Base (FOB) / TAA. When establishing an ATHP to support Live Fire the following requirements must be met:**

   i. **Fire extinguisher for each flatrack of live ammunition**

   ii. **Water barrels for White Phosphorous (WP) munitions**

   iii. **Life Support for ATHP detail (CL I, Water, Fuel, Lodging, Communications)**

   iv. **At least 1 x 10K forklift (licensed operator required)**

   v. **Medical Support – see below**

   vi. **Life Support for any transitioning unit**

   vii. **Banding material and equipment**

   viii. **Concertina wire for all Category 4 munitions**

d. **Drawing Ammunition from ATHP. Each firing battalion will have a representative on a signature card (DA Form 1687), approved DA Form 581, and assumption of command to draw ammunition from the ATHP. Unit representative cannot be working at the ATHP. Approved DA Form 581 by the battalion cannot be partially issued to an individual company at the ATHP. Every unit will have a dedicated vehicle to draw ammo, able to pass DA Form 626 inspection. After ammo is drawn from the ATHP, a unit representative will set up just outside the ATHP to issue the respective units' ammo using DA Form 5515. No live ammunition will be allowed in TAAs, towns, FOBs, or other areas not involved in live fire without approval from 52ID.**

e. **Vehicles in ATHP. Only ATHP unit vehicles and distribution vehicles are authorized in the ATHP. No Maneuver, Fires, or OC/T vehicles will be allowed inside the ATHP when operational.**

36. **Health Services Operations: Rotational Coverage. Only applicable for RTU when conducting Company / Team level or smaller LFX. Units must provide adequate medical coverage, as specified in the 52ID OPORD or subsequent 52ID FRAGOs. If guidance is not specified in these orders then the rotational unit (BCT) will at a minimum provide a qualified physician, physician's assistant, or doctor with FLA, two Medics and SKOs (to include aid bag, backboard, neck brace, and stretcher) for all live fire iterations, to be stationed at FSS Gap. They will have FM communications and will conduct radio checks with ZULU TAC hourly on FM frequency 41.70041.70041.700, PT SC, beginning at 0700 on TD01 until complete with Live Fire.**

37. **Unit Medical Coverage. Maneuver Battalions must provide their own dedicated medical package. Attachments and supporting units require their own medical coverage, but can be supported by maneuver battalions.**

14-4: Executing Live Fire Operations:

38. General Directives: Personal Protective Equipment (PPE). All personnel must possess body armor with SAPI plates while in live fire regardless of PL Dragon status. Uniform is unit directed when PL Dragon is GREEN. Uniform is fit-to-fight when PL Dragon is RED. Fit-to-fight uniform will consist of the following at a minimum:

- **a. Body armor with SAPI plates.**
- **b. ACH or Kevlar helmet equivalent.**
- **c. Eye and hearing protection.**
- **d. Full NOMEX uniform and leather boots are required by all tank crewmembers. Guards will be in place during live fire operations.**

39. MILES. Vehicle and personnel MILES systems must work at all times in order to participate in Live Fire Operations. The MILES kill capability is used both as a safety control measure and to enhance combat realism. MILES Monitoring in Combat Vehicles. MILES must be connected to the combat vehicle's intercom system so that an *AUDIO TONE* is heard in the CVC of the armored vehicle crewman. When an *AUDIO TONE* is heard through the CVC or the CVKI light flashes continuously, clear all weapons, and wait for an OC/T. Gun tubes remain elevated and pointed down range as a force protection requirement.

- **a. MILES Contact Teams. MILES contact teams will be available daily. Units notify an OC/T immediately in case of a MILES problem. If directed to go to the MILES contact team, unit must accomplish this promptly so that instrumentation work can be performed. Failure to do so may result in that vehicle not being able to participate in the battle.**
- **b. MILES Kills without Live Ammunition. Most targets are equipped with MILES sensors to enable rotational personnel to engage with certain missile/anti-tank systems for which the BCT may not be issued live ammunition. The following weapons systems can kill targets with MILES during live fire: 07 TOW, 09 Javelin, 15 Viper / AT-4, 26 Stinger (RPVT) and Controller Gun.**

40. Weapon Safety Posture (WSP):

- **a. RED DIRECT. Direct firing is authorized. All weapons may be loaded, and rounds chambered, but must be kept on mechanical or electrical safe until a target is positively identified and the gun-target line is verified clear by the gunner and the vehicle commander. 52ID will not grant this WSP unless the unit meets the following conditions: 100% accountability of all personnel and vehicles (no one forward report). Helmets, body armor (IBA with SAPI plates), LBV/LBE, eye and hearing protection worn. All blank adapters must be removed from all weapons prior to live fire operations, except for vehicles that will use MILES missile systems in lieu of live missiles. Risk Management Worksheet has been verified by the Dragon OC/T. The Live Fire training unit has downloaded and consolidated all blank ammunition and blank adapters except for pyrotechnic signaling devices and ATWESS charges needed for MILES antitank weapons systems.**
  - **i. Lasers. Lasers are considered DIRECT fire weapons and may be used without eye-safe filters during live fire. Units must request RED DIRECT FOR LASING when not in RED DIRECT status. When granted, lasing will be executed only upon an OC/T's verification that the target area is clear.**
  - **ii. Field Artillery Direct Fire. Field Artillery units may engage targets with direct fire only after granting of RED DIRECT status by Zulu TAC.**

iii. Rotary Wing (RW) Aircraft. Electrical arm switches are on Safe or Stand-by.

iv. Bradley Fighting Vehicles. Electrical and manual safe engaged, ghost round may be cycled; missiles or ATWESS may be loaded in launcher.

v. Tanks. Battle carry per unit SOP, electrical and manual safe engaged.

vi. Machine Guns / COAX. Manual safe with bolt locked to rear.

vii. Claymore / Demo. Blasting caps may be inserted. Firing device may be connected, but must remain on safe.

viii. Javelin / AT4 / Stinger. Launchers configured for firing with safeties engaged.

ix. MICLIC. Vehicle can raise rocket.

x. Live Stinger or Hellfire Missiles. Due to SDZs, units must request RED DIRECT FOR STINGER or RED DIRECT FOR HELLFIRE prior to firing those munitions.

b. RED INDIRECT. Indirect Firing is authorized. Field artillery and mortar units require all of the following: 100% accountability of personnel, weapons, equipment, and ammunition. Maneuver graphics posted in FDC and plotted on observer maps. Includes phase lines, axis of advance, and battle positions. 52ID and unit FSCMs posted both analog and digital in FDC and plotted on observer maps. Meet all 5 Requirements for Accurate Fire. Pre-fire checks conducted on all firing platforms. Misfire procedures rehearsed and posted at all firing platforms. All personnel are in the fit-to-fight uniform. A qualified observer is identified to observe impact of all rounds.

c. GREEN. Firing is not authorized. All weapons will be unloaded, breaches opened, and tubes cleared including ATWESS. All manual and electrical safeties are engaged. Small arms will be completely cleared. Magazine wells and feed trays will be empty.

i. Bradley Fighting Vehicles. For BFV series weapons, ammunition may be uploaded in feeders for 25mm. However, the ghost round will not be cycled. TOW launchers will be lowered and empty, to include ATWESS.

ii. Rotary Wing Aircraft. Attack and armed reconnaissance helicopters denotes the Master Arm Switch and LASER in the OFF position. OH-58Ds with weapons systems uploaded place the LASER in the STBY Mode. 30mm not visible in flex chute with gun cannon plug disconnected (cannon plug may be connected prior to take off from TAA / FARP for missions); M2 .50 CAL (prior to take off from TAA / FARP for missions, round placed in feed tray, master arm in STBY, gun switch safe, visually verify bolt to rear) all other times unloaded. Rockets and Hellfire may be uploaded providing the aircraft is properly grounded. If Rockets and Hellfire remain uploaded, SDZs will apply for the given weapon system.

iii. Claymore / Demo. With OC/T approval, blasting caps may be inserted and systems tested; firing devices may not be attached.

iv. MICLIC. Tie-down straps removed from MICLIC system; rocket head pin installed; rocket electrical cable connected.

d. GREEN AND CLEAR. Firing is not authorized. 52ID TAC will direct subordinate units to this status when situations dictate, normally at the conclusion of live fire events. Vehicle commanders or first line supervisors have inspected and confirm that all weapons are

completely unloaded and cleared (to include any misfires) and on mechanical and electrical safe.

i. **Bradley Fighting Vehicles. All BFV series weapons will be downloaded and their 25mm feeder assembly pulled, cleared, timed, and reinstalled.**

ii. **Rotary Wing Aircraft. Attack and armed reconnaissance helicopters have the Master Arm Switch and LASER switch in the OFF position, aircraft downloaded, including ATWESS.**

iii. **MLRS / HIMARS. Loader Launcher Module (LLM) in stowed position and W19 / W20 cables disconnected from rocket pods.**

iv. **MICLIC. Charge and rocket loaded and secured; rocket pin and rocket electrical cable disconnected.**

v. **Bore verified clear.**

vi. **Claymore/Demo. Claymore mines and demolitions may not be primed.**

e. **FORSCOM Amber. NTC does not utilize an "Amber" posture. Units whose SOP follows the FORSCOM "Red / Amber / Green" method, may utilize their internal SOP for additional control so long as it does not violate the NTC-directed WSP in effect. Example, a battalion already authorized RED DIRECT might direct mounted squads to carry small arms with magazines inserted, but chambers empty (FORSCOM condition Amber) until dismounting.**

f. **Weapons Control Status (WCS). NTC allows the rotational unit chain of command to issue doctrinal WCS to subordinate elements. Subordinate units may authorize a more restrictive WCS without requesting a change through their chain of command. WCS authorized for use at NTC are as follows:**

i. **WEAPONS HOLD. Engage targets only when ordered.**
ii. **WEAPONS TIGHT. Engage targets after positive identification as enemy.**
iii. **WEAPONS FREE. Not authorized at NTC.**

g. **Additional.**

i. **ICW WSP. WCS can be used ICW WSP. Example: RED HOLD or RED TIGHT.**

ii. **OC/T Control. If unsafe conditions exist, OC/Ts may direct rotational units to assume a RED HOLD status, to prevent firing until the situation is resolved**

iii. **Rehearsals. Prior to executing the LFX the unit must conduct a CAR, Fire Support Rehearsal, a Sustainment rehearsal, and a full mounted rehearsal.**

iv. **Targetry. In live fire, never move past a target that is still presented (up).**

v. **Moving Targets. There are no moving ground targets in live fire.**

vi. **Hard Targets. Hard targets (vehicle hulks) may not be engaged with direct fire during Major Combat Operations. On the NTC battlefield, hard targets serve as CAS targets only during MCO. Hard targets may be engaged with indirect fire during STX LFX lanes.**

vii. **Target Overkill. If a target is engaged and it does not go down after being hit twice with 120mm or three times with 25mm, move to another target. If the target continues to emit direct fire signatures, it probably was not hit.**

viii. **Sound Simulators. Sound effects devices are often used in conjunction with the dismounted targets in defensive positions, or along dismounted avenues of approach. These devices are normally somewhat offset from the target mechanisms. Do not engage the sound effects simulators.**

ix. **Mannequins. Tactical COEFOR Multi-Purpose Target (TOMI) mannequins will be inside trench systems and urban objectives. These targets are designed to collapse following center-chest hits. However, not all TOMI targets may reliably fall. Soldiers clearing trenches and conducting Battle Drill 6 must immediately pull down and move aside any target that does not fall after being shot. Any noncombatant targets present should be pulled down as well, even if not engaged.**

x. **Point Blank. No point blank fires (closer than 1 meter) at targets, due to ricochet.**

xi. **Target Pits. Do not run over target mechanisms. Do not occupy target pits with vehicles or dismounted troops. Do not attempt to manipulate or operate target mechanisms.**

xii. **Firing over the Head of Troops. Direct fire weapons will not fire overhead of troops. This restriction includes MILES systems.**

xiii. **FSCM & SDZ Violation Authority. During Live-Fire Operations, the NTC Commanding General withholds authority to violate Restricted Fire Areas (RFAs) and SDZs.**

xiv. **Subterranean Live Fire Areas. Currently, no subterranean environment at the NTC supports either live demolitions or ammunition. No firing of live demolitions or ammunition is allowed underground without a waiver.**

41. **Transition to Live Fire: When the RTU is executing LFX, the entire element is considered to be in live fire and all Soldiers supporting the Live Fire maneuvering force (FA, BN, BSB, etc.) will comply with these instructions. Prior to conducting live fire operations, the RTU will ensure that: Blank Ammunition. The entire element has downloaded and consolidated all blank ammunition.Equipment Prep to Live Fire Actions. All blank firing adapters and MILES transmitters must be removed from all weapons prior to live fire operations. Screen / Zero Requirements. All combat vehicles must have completed screen / zero operations prior to live fire.**

42. **Small Arms Zero Requirements. All small arms must have a valid zero, either from home station, or confirmed at the NTC. Laser borelight kits will produce a valid zero if utilized correctly.**

43. **Medical Support. The rotational Brigade must provide the following medical support (normally from the BSB Medical Company) to the Dragon Team which will be prepositioned at FSS Gap and maintain radio contact with ZULU TAC hourly prior to any live fire operations. This requirement is only in effect when the RTU is conducting Company or Platoon level LFXs.**

    1 x Physician or Physician's Assistant
    2 x Qualified medics
    1 x Wheeled ambulance (e.g. FLA or Stryker MEV Variant) with FM communications
    2 x Aid bags and trauma supplies sufficient for immediate stabilization and treatment of serious injuries.

44. **Weapons Restrictions in Urban Areas. Firing within the urban areas is limited to 9mm and 5.56mm only. Snipers and Squad Designated Marksmen may utilize 7.62mm in precision fire engagement only. M249 fire is authorized but restricted to ball ammunition, utilizing 3-5 round**

bursts only. No fully-automatic fire in buildings is authorized. No tracer ammunition will be fired into or within buildings by any weapon system due to fire hazard. Stress inoculation fire at a single point location is unauthorized on SACON structures due to the damage that the structure will endure.

45. **Firing Outside of Buildings. Units may use any available direct fire weapons to engage targets outside of the buildings. Direct fires over the heads of troops is not authorized, including the M21/M24 Sniper Weapons System, unless specifically approved by the installation commander IAW DA Pam 385-63, section 6-2. Units must ensure that the assault element is clear of supporting weapons' surface danger zones (SDZ).**

46. **15-Degree Flanking Fire. 15 degree flanking fire is authorized for tripod/T&E or vehicle-mounted systems under certain conditions IAW DA Pam 385-63: Positive means must be employed to ensure the firing unit knows the location of the maneuver unit. The support by fire unit will maintain a 15 degree fire and ensure rounds do not impact within 100m of troops. Machineguns in the SBF will orient the tripod so that metal to metal contact occurs on the friendly side of troops. For weapons that do not meet the criteria for 15° flanking fire, normal SDZs apply (40 degrees for most small arms).**

47. **Use of Smoke/Pyrotechnics in Buildings. No use of smoke or pyrotechnics inside of the buildings due to fire hazard. TARGETS, TOMI Mannequins. Tactical COEFOR Multi-Purpose Target (TOMI) mannequins will be located inside buildings. These targets are rigged to collapse following center-chest hits. However, targets may not always fall. Soldiers must pull down any target that does not fall on its own, so that follow-on forces do not accidentally engage. Any noncombatant targets present should be pulled down as well, regardless of whether or not they were fired upon. Remember: In live fire, never go past a target that is still standing!**

48. **Point-Blank Fires. No point blank fires (closer than 1 meter) at targets, due to ricochet hazard.**

49. **Trench:Fires on the Strong Point / Trench Objective. Units may place direct fires directly on the actual objective prior to assaulting. No indirect fires will be fired directly on prepared trench systems. An RFA will be established over each trench system IOT prevent indirect fires directly onto a trench system. 15-Degree Flanking Fire. 15 degree flanking fire is authorized for tripod / T&E or vehicle-mounted systems under certain conditions IAW DA Pam 385-63: Positive means must be employed to ensure the firing unit knows the location of the maneuver unit. The support by fire unit will maintain a 15 degree fire and ensure rounds do not impact within 100m of troops. Machineguns in the SBF will orient the tripod so that metal to metal contact occurs on the friendly side of troops. For weapons that do not meet the criteria for 15° flanking fire, normal SDZs apply (40 degrees for most small arms).**

50. **Weapons Firing Inside of Trenches / Bunkers. Weapons firing 5.56mm and 9mm are the only authorized weapons inside the trench / bunker system. All weapons must be on safe with muzzles pointed down (low ready) when in the trench except when firing. Soldiers in the trench may not fire at targets outside of the trench. Do not fire directly into the firing ports of fighting positions at close range (within1meter) due to the ricochet hazard.**

51. **Marking Systems. The unit will use their internal SOP to mark the forward progress of the lead element in a trench system. In addition, an OOC/T with an orange flag will walk just behind and above the lead man in the trench.**

52. **Fragmentation Hand Grenades: Authorized Uses. Live fragmentary grenades can be used to enter the trench system, to clear around corners within the trench system, and to clear bunkers. Kit Configuration. Grenades must be carried in Army-issued pouches designed for that purpose (e.g., M16 ammo pouch, LBV grenade pockets, or MOLLE grenade pouch).**

53. **Restrictions on Stacking. If live fragmentary grenades are used to clear corners or bunker entrances, only the first two Soldiers can stack directly at the corner. The remainder of the team must remain at least 5 meters back, to allow the first two Soldiers room to react in the event that the grenade bounces or rolls back.**

54. **Individual Weapon of Throwing Soldier. Soldiers employing grenades will not attempt to hold their individual weapon in hand while prepping or throwing a grenade. The Soldier's weapon must be either be held by another Soldier, secured by a "hands-free" style assault sling, or placed flat on the ground nearby.**

55. **Two-Man Trench Entry Requirements. If the two-man trench entry is used (FM 3-21.8, Battle Drill #7), the Soldiers dropping the grenades will lay feet-to-feet as they prep and drop (not throw) the grenades. After the grenades are dropped, the team leader will physically grab the grenade throwers as they roll away, and maintain positive control of both Soldiers to ensure they do not attempt to enter the trench before both grenades detonate.**

56. **Securing of Hand Grenades in Pouches. Hand grenade spoons will not be taped.**

57. **Cooking Off Hand Grenades. Hand grenades are not authorized to be cooked off or thrown outside of the trenches and bunkers. Every Soldier will announce "Prepping Frag" when he removes the grenade safety clip and "Frag Out!" when he removes the pin and deploys the grenade. All personnel in the vicinity will drop prone and face the blast.**

58. **Accountability. The unit will keep a running count of all grenades detonated. The unit cannot go GREEN AND CLEAR until all grenades are accounted for.**

59. **Verbal Shouts/Warnings. Thrower will yell the word "grenade" to alert personnel to take cover in the event that an errant fragmentary grenade bounces or rolls back.**

60. **Aviation: Control While in Live Fire Area. Rotational unit aircraft in the live fire area will operate under the control of the following agencies in priority: The Aviation Trainers (Eagles), the 52ID TAC "ZULU TAC", and Range Control.**

    a. **Aviation Trainers. Unit aircraft escorted by an Eagle OC/T will conduct tactical operations IAW instructions from their chain of command. All aviation units must request entrance into the live fire area via 52ID TAC "ZULU TAC" on (P) 64.500 SC PT (A) 41.700 SC PT and maintain positive communications with the Live-Fire Bunker at all times.**

    b. **52ID TAC "ZULU TAC". Unit aircraft that are not escorted by an Eagle OC/T must establish contact with ZULU TAC (64.500/41.700 PRI/41.700 ALT) prior to entering the live fire area. Aircraft will not climb above the coordinating altitude while attempting to establish contact with ZULU TAC unless approval has been given by CT-OISdance Advisory or Desert Radio. If the aircraft is not able to contact ZULU TAC, it will not enter the live fire area.**

    c. **Range Control. Unit aircraft not escorted by an Eagle OC/T will contact Range Control on FM 38.90 to enter the live fire area only when ZULU TAC is not operational.**

    d. **Coordinating Altitude. Specified coordination altitude to be utilized is in the ACO. To ensure safe operations, all fixed wing aircraft remain above the respective coordination altitude (AGL) and rotary wing aircraft will typically remain at least 500' below respective coordination altitude (AGL) unless coordination with CT-OISdance Advisory or Desert Radio has occurred.**

    e. **Aircraft MILES. Aviation units will ensure that all aircraft have operational MILES. The unit will remove the MILES from the firing aircraft IAW the current air worthiness release.**

f. Continuous Communications. Unit flight operations will maintain continuous communications and locations of all unit aircraft and indirect fire systems in the Live Fire area of operations.

g. Accountability. The aviation unit must have positive control over all aircraft, vehicles, and personnel at all times. Not being able to account for any of the above will halt the entire live fire operations.

h. Target Pits. Aircraft will not hover over target pits due to the potential hazard of radio transmissions setting off the pyrotechnics.

i. Fratricide Prevention. Aircraft must remain within coordinated corridors, holding areas, battle positions, etc., so as to be afforded protection from friendly fires and adhere to all published maneuver graphics and airspace control measures.

j. Precautionary Landing Procedures. Aircraft experiencing a precautionary landing will execute the appropriate emergency procedures and notify ZULU TAC and their chain of command. The aviation unit should recover the crew and aircraft as soon as possible. Aircraft will report current location to "ZULU TAC" and that the weapons systems are "Green and Clear" of all ammunition. In the event that the aircraft lands forward of firing ground elements, the aviation unit will recover the crew immediately. The aircraft will be recovered at a time when it does not interfere with the ground scheme of maneuver. The aviation unit's chain of command will notify the 52ID TAC "ZULU TAC" for the coordination of a "No Fire Area" around the aircraft's location and a future time to recover the aircraft.

k. Overhead Fire. Overhead direct fire is not authorized at the National Training Center.

l. Engagements in Vicinity of Troops. Unit aircraft escorted by an Eagle CT may conduct properly approved live fire engagements in proximity to both protected and unprotected troops using minimum safe distances designated by, and at the discretion of the senior aviation trainer and senior live-fire trainers. The Minimum Safe Distance of each weapon system is greater than the risk-estimate distance for 0.1 % Probability of Incapacitation (PI) as outlined in FM 3-09.32, MCRP 3-16.6A, NTTP 3-09.2 and AFTTP(I) 3-2.6. Risk-estimate distances are for combat use only and are defined as the distance in meters from the intended center of impact at which a specific degree of risk and vulnerability will not be exceeded. The probability of incapacitation (PI) is the probability that a soldier will suffer an incapacitating injury. Percent PI value is less than or equal to 1 chance in 1,000. Aircraft will not engage targets located between the aircraft and ground troops or vehicles. The minimum safe distance for 30mm TP, .50 Cal., and 2.75" rockets is 500 meters at the National Training Center.

m. Situational Awareness Requirements. All aircraft Pilots in Command (PICs) will have artillery, mortar platoon locations, friendly ground positions down to Battalion / Task Force level plotted on their maps. Special attention should be given to the locations of small units (e.g., COLT/SCT OPs). Map will be 1/50,000 scale. Failure to have the required graphics posted on the map will result in mission delays.

n. Reporting Use of Red Star Clusters and Red Smoke. Aircrews will report the use of all Red Star clusters and Red smoke to the chain of command and an Eagle OC/T.

o. Safety. Safety is a command responsibility; however, the senior aviation trainer reserves the right to ground any aircrew, halt any vehicle, or otherwise stop any unit operation if he has reason to believe that a safety hazard exists. This halt of any operations can only be lifted by the senior aviation trainer.

p. Radio Procedures: Desert Radio Flights. Desert Radio flight follows all aircraft. Scenario dependent, BLUFOR aircraft should expect to flight follow with Desert Radio or the Eagle OC/T (OC/T may make the position report to Desert Radio). Aircraft that lose communication with their OC/T must signal the OC/T IAW the AC2 brief, assume a "GREEN" status, land immediately, and reestablish communications with the OC/T. Flights operating with an OC/T escort must have at least one aircraft in contact with an OC/T. Aircraft in a flight experiencing a loss communications will assume a "GREEN" status, and remain with the flight.

61. Sectors of Fire. All vehicle positions will be marked with <u>five stakes</u> if not dug in, and <u>three stakes</u> if dug in (Illustrations 3-10 Figure 1 and Figure 2). Two stakes will be used to mark the weapon's left and right firing limits. The third stake in the center of the position guides the driver. Also, in positions that are not dug in, two more stakes, at the #1 and #5 left side road wheels, must be used to ensure the vehicle is properly oriented upon occupying the position. Limiting stakes are required for all firing vehicles (M1A1, M113s, BFV series, HMMWVs, etc.). OC/Ts on the ground may grant exceptions for security forces.

a. The driver's limiting stake will touch the front of the vehicle when it occupies its firing position (centered on the driver/driver hatch). The top of the stake will be at driver's eye level, so the driver can ensure the vehicle occupies its correct sector.

b. Limiting stakes will be placed on the left and right of the gun. Tank crews will ensure that the gun tube touches the limiting stake. BFV crews will place the stakes so that they are visible from the BC and gunner's vision blocks, and gunner's unity window when buttoned up. Limiting stakes for main armament apply to all vehicle direct fire weapons systems.

c. Additional stakes may be needed to make the stakes high enough to meet the requirements in paragraph 3-9.3 (In most terrain, BFVs that are not dug in will need limiting stakes that are two pickets tall, meaning that <u>seven stakes</u> are usually required).

d. All dug-in vehicle positions must be marked IAW Chapter 1-16 when not occupied. This requires <u>four additional stakes</u> per position.

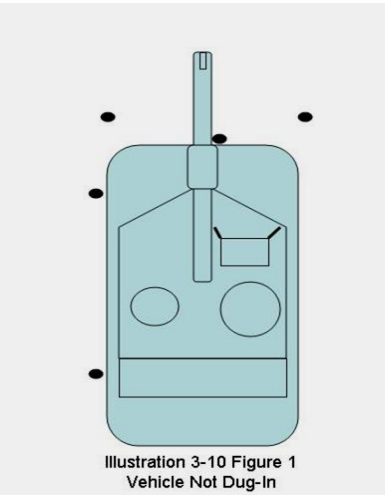


Illustration 3-10 Figure 1
Vehicle Not Dug-In

Night

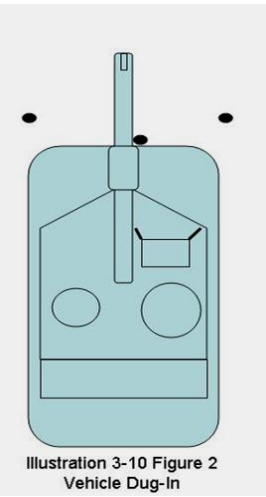


Illustration 3-10 Figure 2
Vehicle Dug-In

62. Vision Aids. Chem-lights or colored flashlights will be placed on all the stakes. Different colors will be used on the limiting stakes and the driver's stop stake so the crew can quickly discriminate between the three stakes.

a. Crews will physically identify all the limiting and sector stakes, and vehicle commanders will ensure that all crew members understand the difference between the drivers limiting stake and the vehicle's sector stakes.

b. The rotational unit will inspect the left and right limits of every position. In order for a crew to fire from a position, they must proof that position with their platoon OC/T. Crews who have not proofed their own position will not be allowed to fire.

c. If any limiting stake or night visual aid is knocked down or repositioned, the crew will cease firing and clear all weapon systems. An OC/T will kill the vehicle once this situation is identified. Once the battle begins, crews are not allowed to fix stakes or night visual aids.

d. Stakes are not a replacement for the vehicle commander. The vehicle commander must make the final determination that the target is indeed a plywood panel and not an actual vehicle. This determination must be made regardless of the firing vehicle's position and sector of fire.

e. Infantry fighting positions must be built to standards outlined in GTA 7-6-1, Fighting Position Construction – Infantry Leaders' Reference Card. Positions may be "built up" or "built down", but must include aiming and limiting stakes, and stringers of adequate length. Overhead cover, if used, must be no less than 18 inches and constructed to standard. Additionally, positions with overhead cover must demonstrate stability by holding the weight of a 200-pound man. Positions may require the use of support stakes and/or revetments to enhance stability. Fighting Position Overhead Cover (FPOC) may be used without stringers, but only if the FPOC exceeds the position width by a minimum of 12 inches on each side of the hole. Fighting positions that are not to standard or deemed unsafe may not be used.

f. Brigade Reserve/Security Force. There is no requirement to stake in the Brigade Reserve fighting positions if the action will take place during daylight hours. However, it is strongly encouraged. If the scenario is to be executed during daylight, the Brigade Reserve must conduct a full force rehearsal of the movement into position and conduct coordination with adjacent units. If the scenario is executed during the hours of darkness, every fighting position must be staked, marked, and proofed during daylight. Occupation must be rehearsed in the same conditions, as it will occur during the fight. Security Force or forward screen line units are not required to stake in their forward positions if the execution of the scenario is during daylight hours (staking, however, is strongly encouraged). If the scenario is executed during hours of darkness, all positions must be staked, marked, and proofed during daylight hours. Displacement from the security or screen line to the main BP must be rehearsed under the same conditions as it will be executed during the battle. If the Security Force mission is executed from the main BP, then all positions must be staked and proofed during daylight, regardless of the time of execution.

g. Reconnaissance, Surveillance, and Target Acquisition Operations. Dismounted and mounted reconnaissance operations are permitted and encouraged during Live Fire as long as adequate planning, coordination, and control are accomplished. Before reconnaissance is conducted forward of the FEBA, the unit commander must ensure appropriate fire control measures are established. The unit will then notify the 52ID TAC and their OC/T. No dismounted element will deploy without an OC/T.

63. Mortars General Directives. See 14-04.03.a for additional guidance.

a. Location. Mortar firing positions require a DAGR with FOM 1 for location. Map spots are not allowed during live fire operations. Platoon section must be laid for firing with an M2

aiming circle. The lay of the platoon/section must be verified with a declinated M2 compass or an M2 aiming circle. All ground mounted mortar systems must settle each tube base plate and verify lay prior to conducting a registration or FFE mission in the indirect fire mode.

b. Minimum Safe Distances (MSD): MSDs established by NTC are listed in the table below. For additional MSDs see ANNEX A for current NTC Deviations.

System	Direct Lay	High Angle	w/ Registration
60mm	150m	800m	320m
81mm	200m	800m	500m
120mm		800m	

c. Ammunition. Charges will not be exposed and will be in a sealed container prior to firing. Pre-cutting of charges is not authorized at NTC.

d. Boresight. Boresight of mortar sight must be conducted IAW the appropriate TM as a part of mortar PCC/PCIs prior to live fire operations, whether digital or degraded.

e. Misfires. Misfires will be removed IAW the appropriate TM and unit SOP. Misfires will not put the entire unit in CHECK FIRE.

f. Direct Lay. If the 81mm or 60mm mortar is used in the direct lay mode, fires are locally cleared by a Dragon and Maneuver OC/T.

64. Fires General Directives. Directives also apply to mortars.

a. Conduct. Firing prior to receiving a RED INDIRECT status and clearance to fire from an OC/T is not authorized during LFX. Fires will be conducted IAW all current and applicable TMs, TCs, FMs, and other military publications.

b. Requirements of Accurate Fire. Upon receipt of RED INDIRECT, firing units must maintain the 5 Requirements of Accurate Fire. Meeting all 5 requirements will allow the unit to Fire For Effect (FFE). Failure to maintain a requirement will require the unit to adjust fires or conduct a registration prior to entering FFE. See CH 4 for definitions.

c. Observation. There are no unobserved fires during live fire. A certified observer team must observe every indirect round fired. Radars and unmanned aerial systems cannot be utilized as observers independently, or used together, but can be employed to augment observer teams.

d. Communications. Communications with controlling Higher Headquarters (HHQ) and observers must be maintained by the FDC at all times. If communications are lost with controlling HHQ (at any time) and/or observer (during fire mission), the firing element and FDC will place itself in Check Fire until communications are re-established. Digital communications alone are not acceptable.

e. Graphics. In support of a CALFEX, units must have maneuver graphics to include, but not limited to, phase lines, battle positions and axis of advance.

f. Minimum Safe Distances (MSD). MSDs established by NTC are listed in the table below. For additional MSDs see ANNEX A for current NTC Deviations.

System	Low Angle	High Angle
105mm	600m	650m

155mm	**800m**	**1000m**
MLRS / HIMARS	**2000m**	

g. Direct Fire Engagements (excludes howitzer direct fire). Units must meet crew qualification standards listed in chapter 14-02 prior to execution and adhere to all directives for maneuver units.

h. Clearing Indirect Fires. Prior to firing a mission or subsequent corrections, the FDC must give the OC/T the artillery mission card for final clearance during live fire. Card includes the following: Target number, Target location, Howitzer or launcher to fire, Number of rounds or rocket by type, Type of sheaf, Max ordnance and Low or high angle.

i. Firing Incident. OC/Ts will place firing units in CHECK FIRE if unsafe acts are observed, rounds impact unsafe or far from intended target location, or FSCMs are violated. The unit is required to investigate all firing incidents and take measures to correct unsafe conditions to prevent recurrence. If an element is de-certified, re-certification must be conducted and validated through Wolf 07 prior to that element continuing live fire.

65. Cannon Artillery: Direct Fire Engagements with Howitzer. Cannon Artillery units may engage targets with direct fire only when approved by the Senior FA Trainer and upon granting of a RED DIRECT status from ZULU TAC. Risk Management Worksheet must include hazards associated with direct fire and signed by the appropriate approval authority. Area E must be clear of all personnel, equipment and vehicles. Unit is responsible for clearing Area E prior to firing.

a. Unit leadership must have a plan to control direct fire engagements and ensure all Soldiers understand the NTC WCS designations. Leadership must coordinate with all adjacent units for sectors of fire and other mutual defense issues. Sectors of fire must be established, marked, and verified. Section Chiefs must verify direct fire telescope bore sight and fun target line clearance prior to engaging targets.

b. Fighting positions must be built IAW GTA 07-06-001. Refer to CH 14-03.02 for conduct of fire from fighting positions.

c. Planning and Use of Self-illumination. Range to fuse function must be no less than 500 meters from friendly troops. Range to canister impact must be no less than 1,000 meters from friendly troops. Self-illumination targets must be pre-planned. The battery must select an observer per unit TACSOP and he must have eyes on the pre-planned illumination target in order to adjust.

d. Killer Junior (direct fire with a timed fuse). Do not plan or engage Killer Junior targets closer than 1200 meters due to explosion safety hazards (Danger Area E) in Live Fire. The battery chain-of-command must establish, verify, and distribute Killer Junior Rotational Tables for each howitzer IAW FM 6-50. HE time fuses (MTSQ) may only be used during battery lanes. *Warning: Failure to perform dual independent checks at the gun may result in injury or death from projectile bursting prematurely in front of howitzer.*

66. MLRS and HIMARS Artillery: PL/PSG is responsible for ensuring Section Chiefs have the current and signed Safety T. Section Chiefs must verify the current Safety T with FDC. Incorrect or previous Safety Ts must be returned to the PL/PSG. Changes to Safety T require dry fire verification prior to implementation during live fire.

a. The unit will ensure that Exclusion Area 1 is clear of personnel. See ANNEX A for current NTC deviations. Pods will not be connected until Red Indirect status has been given by

OC/Ts. Units will be directed through their chain of command to change WCS as appropriate. The chain of command must communicate changes to WCS to their battery OC/Ts. LLM will be stowed before and during any movement unless otherwise approved by battery OC/Ts.

b. Observation: Location. There are no designated Observation Posts (OP) in live fire. Observer Teams are required to self locate with DAGR and provide an eight to ten digit grid position to the HHQ and supporting FDC. Map spotting is not authorized. OP locations will be reported and an 800m No Fire Area (NFA) will be established and disseminated. Observers must be accompanied by an OC/T to observe fires.

c. Night Operations. Observer Teams are required to utilize observation systems equipped with thermal imaging for operations under limited light or darkness. Night Vision Devices and Enhanced Night Vision Devices cannot be used for observation alone unless adjusting illumination.

d. Communications. Voice communications with HHQ and supporting FDC are required at all times. Digital communications alone are not acceptable.

67. Fire Support Lasing Operations: Safety filters, training cables, and/or inhibitor plugs must remain installed until the operator receives RED DIRECT FOR LASING from an OC/T. Lasing devices will only be used in the presence of an OC/T. The OC/T will request clearance of any area being lased from ZULU TAC prior to the laser being activated.

a. Laser Classification. Class 1 lasers do not require a RED DIRECT FOR LASING STATUS. If the filter, training cables, or inhibitor plugs cause a Class 2-4 device to be classified as a Class 1 laser, it may be used without RED DIRECT FOR LASING status as long as the filter, cables or plugs remain properly installed. Class 2-4 lasers require RED DIRECT FOR LASING status.

b. Buffer. When operating a laser, the operator must have a 15 mil buffer when lasing over a reflective surface, near personnel, or below sky line. If personnel are moving and there is a chance that the 15 mil buffer will be violated, lasing will no longer be authorized.

c. Report.The following engineer reports will be sent to the 52ID TAC during operations from rotational units:

i. Report obstacle intention (obstacle overlay and obstacle matrix) before emplacing any obstacle.
ii. Report obstacle initiation, progress every two hours, and completion.

iii. DA Form 1355s and/or DA Form 1355-1s are required for all obstacles with mines.

iv. Reporting of Obstacles. Emplacing units must report all obstacles to the Engineer OC/T to ensure battlefield effects are properly replicated.

v. Execution of Activities. All engineer and engineer related activities will be conducted IAW this EXOP, OPORDs, TSOPs, and in compliance with established procedures and Army regulations.

d. Emplacement of Positions. Rotational units may emplace any type of mobility, counter-mobility, or survivability positions as long as the following criteria are met:

i. At the conclusion of Live Fire, all rotational unit obstacles and individual/vehicle fighting positions will be cleared and filled by the responsible rotational unit.

ii. **Any and all excavations must be filled.**

iii. **All Class IV and V materials will be removed at the end of Live Fire, or as directed by the Senior Live Fire Trainer.**

iv. **All training mines will be returned to the directed location.**

v. **Yellow smoke will not be used in Live Fire operations by rotational units. Yellow smoke is only used to identify COEFOR SCATMINE and CBRN.**

68. **COEFOR Obstacles. All COEFOR mines have a full width vehicle kill capability. Any vehicle which drives over or hits an antitank (AT) mine will be assessed as a Catastrophic Kill. If an anti-handling device or mine is activated, any individual within 25 meters may be assessed as a casualty. This includes Soldiers not buttoned-up in hardened vehicles. All minefields that have been under the control of the COEFOR will be treated as COEFOR minefields. The unexploded ordnance area is activated if touched or driven over. Individuals not buttoned up within 25 meters may be assessed as a casualty.**

69. **IED and UXO Reduction. Capabilities and limitations for EOCA/R2C2-S reduction of IEDs: May reduce IEDs ONLY when maneuver is the highest priority. Reduction of UXOs within Live Fire is prohibited. NO MANUAL APPROACH. Must conduct either mechanical (Buffalo) or robotic interrogation and robotic charge placement. Single EOCA may reduce IEDs; does not require multiple EOCA certified Soldiers to execute. EOCA may reduce and/or exploit any type of initiation system **if new type of initiation system has been identified, exploitation has priority*.***

a. **IED may consist of any number of military ordnance items (i.e. 155mm and below authorized for reduction). MUST positively identify ordnance type and size: No Explosively Formed Penetrators (EFPs) or Shaped Charge Munitions, No items over 155mm Military Grade Munitions, Improvised Rocket Launchers (IRL) may be reduced by EOCA, No Chemical, Biological, Radiological, Nuclear (CBRN) munitions, No "Daisy chained" items, No suicide bombers or VBIEDs, No Home-Made Explosives (HME), IED must be surface laid; buried or partially buried IEDs must be reduced by EOD, Area must be able to withstand a high order detonation, If IED falls within capability for EOCA to reduce, decision for reduction resides with the PATROL LEADER and EOCA on the ground. For any IED outside of the above guidelines, Battalion Commander approval is still required, Rotational Unit EOCA and/or R2C2-S are NOT authorized to clear UXOs within AO Dragon.**

b. **Demolitions:Use of Demolitions. Demolitions will only be used when an Engineer OC/T is present. Demolitions are inclusive of the following: detonating cord, TNT, military dynamite, C-4, cratering charges, shape charges, Bangalore torpedoes, live charges, blasting caps, and expedient demolitions.**

c. **Pre-Prime of Demolitions. Engineers may pre-prime demolitions with detonating cord at any time (State I). Engineers will not connect or emplace a blasting cap to any demolitions (State II) without Engineer OC/T permission.**

d. **Ignition Systems. Engineers can build ignition systems at any time. A minimum of two minutes of time fuse is required. In addition, a test burn must be conducted in the presence of an Engineer OC/T. All initiating sets, priming methods and firing systems will be constructed IAW Ch. 2 FM 3-34.214 (Explosives and Demolitions).**

e. **Shunting. The MICLIC is the only authorized electrically initiated charge at NTC, the MICLIC firing system will remain shunted until connected to the blasting machine.**

f. **Danger Safety Zone. The rotational engineer unit is responsible for notifying the TF chain of command to clear the danger safety zone. After the danger safety zone is cleared and**

the TF verifies accountability of all personnel, the senior engineer on site will notify the Engineer OC/T and request permission to arm the demolitions. Prior to granting permission to arm, the Engineer OC/T will also verify that the danger safety zone is clear. Once the emplacing unit receives permission to ignite the demolition from the chain of command, the senior engineer will request authorization to detonate from the Engineer OC/T. Only after the Engineer OC/T grants permission will the engineers ignite the demolition system. Stand-off will be IAW FM 3-34.214.

g. Inspection Post-Detonation. The Engineer OC/T will be the first person to inspect the demolitions site after the charges have detonated. If all is clear, normal operations will continue.

h. Misfires. In the event of a demolition misfire, the engineer OC/T determines what actions will be taken. Demolition misfire clearing operations are conducted as stated in Section II, Ch. 6 FM 3-34.214, (Explosives and Demolitions)

i. Pop and Drop Breach. Due to concern for effective engineer OC/T control, the "Pop and Drop Breach" method will not be conducted during Live Fire operations. The "Pop and Drop Breach" method is defined as utilizing multiple charges, separately primed and initiated, it does not matter whether they utilize time fuse or command initiation.

j. MICLIC Operations. Prior to firing the MICLIC during the combat operations, the platoon leader must notify the TF chain of command to begin clearing the surface danger zone. NTC has deviated from SDZ requirements in AR 385-63. The following procedures will be followed when conducting live MICLIC operations.

k. Only the MICLIC towing vehicle and a plow tank may remain in Area F, which is a 30 meter radius around the MICLIC. These personnel shall be in an armored vehicle with the hatches sealed and wearing single hearing protection.

l. The Breach Force Security Element may occupy the fragmentation zone behind the MICLIC firing line outside of Area F. These personnel shall be in an armored vehicle with the hatches sealed and wearing hearing protection.

m. Vehicles and personnel with tactical relevance are allowed in the noise hazard contour behind the MICLIC firing line. All dismounted personnel and soft skin vehicles must be 200 meters from the MICLIC firing line.

n. After the danger zone is cleared, and the TF verifies accountability of all personnel, the senior engineer on site will notify the Engineer OC/T and request permission to fire the MICLIC. Prior to granting permission to fire, the Engineer OC/T will also verify that the safety danger zone is clear IAW the approved deviation. Once done, the Engineer OC/T will grant permission to fire. Only after the Engineer OC/T grants permission to fire, will the MICLIC be fired.

o. Modernized Demolition Initiators (MDI). MDI cannot be used with conventional demolition initiation systems (M7 nonelectric blasting cap, M6 electric blasting cap, M60 fuse igniter, or M700 time fuse). The unit must either use all MDI or all conventional initiation systems but not both. All Soldiers must be certified by their company commander as being trained on MDI prior to use at the NTC. MDI is the preferred demolition initiation system at NTC.

70. CAS. A qualified Joint Terminal Attack Controller (JTAC) or Forward Air Controller (FAC-A) must use Type 1 Control procedures for all live CAS engagements unless requirements for Type 1 is waived by Raven 07 and replace with either Type 2 or Type 3. A Raven OC/T must be present for all live CAS engagements. Aircraft must be cleared to depart the Initial Point (IP) by the final control authority (see table below). A JTAC must provide final control for targets within 3,000

meters of the Forward Line of Troops (FLOT). Aircraft must receive a "cleared hot" call from the final control authority on each pass prior to releasing live ordnance. CAS targets within 5,000 meters of any personnel must have a visual mark.

a. Marks at NTC are limited to the following:

2.75 inch WP / HE / SP / TP or JSLIST rockets. TP rockets require multiple releases.
20mm, 25mm 30mm guns TP / HEI
MTR, 105mm, 155mm HE / WP / ILA / SMK
120mm TPCSDS, HEAT-TP-T
FAC-A delivered BDU-33 / MK-76
IR Pointers or Laser Target Designators (LSS / LST)
VDL Capture
Smoke grenades delivered from RW (hand tossed)
.50 Cal
81mm mortars HE / WP / ILA / SMK
60mm mortars HE / WP / ILA / SMK
40mm grenades delivered by MK-19
AT4 84mm

b. NOTE: GP Bombs and inert ordnance are not an acceptable mark. All ABORT calls are given in the clear (no authentication) by anyone observing an unsafe act.

c. JTAC / FAC-A will pass a CAS 9-line brief to the aircrew prior to the aircraft departing the IP / CP for each CAS attack. Terminal Attack Controllers use the following considerations in developing their 9-line briefing:

FLOT and other friendly forces (COLTS, Scouts, TACs, etc.)
Fire Support Coordination Measures
Artillery and mortar locations / gun target lines
Airspace conflicts / ROZs

d. Self Illumination. Aircraft released LUU and Rocket Flares are authorized. Range-to-fuse function must occur at least 500 meters away from friendly units' positions. Range-to-impact must occur at least 800 meters from friendly units' positions.

e. Air-to-air engagements between opposing rotary / fixed wing forces are not authorized within the R2502 N/E airspace.

f. Fixed wing engagements against flying helicopters are not permitted.

g. Aircraft will operate with IFF systems activated at all times.

h. The FLOT and individual positions forward of the FLOT must be marked to allow for quick aerial identification of the friendly positions during night-live CAS operations only. FAC-As and attack aircraft must confirm location of friendly Troops.

i. Fixed-wing aircraft will fly appropriate tactics for the ADA threat level.

j. VFR weather criteria is 1500 feet / 3 nautical miles or 500 feet above minimum release altitude (whichever is higher) for live weapons release.

k. CAS with live ordinance may over fly but not "hold" over friendly troops. Aircraft will not overfly friendly troops if the aircraft has "hung" bomb.

l. Cluster munitions are not authorized; however, coordinate dependent weapons (JDAM) are authorized at the NTC. AGM-65 is authorized on Leach Lakes targets 3, 4 and 5 per safe-range employment restrictions.

m. Raven OC/Ts will direct aircraft that are unable to expend ordnance in live fire to an alternative target at Leach Lake Tactics Range that is at least 5,000 meters from any personnel.

19. Airspace Management:

a. Coordinating Altitude. The coordination altitude for R2502 N/E "The NTC Range-Complex" will be in accordance to Green Flag West Spins published for each rotation. Violation of the coordinating altitude will result in a range foul for the aircraft.

b. Airspace Coordination Area. Formal and informal ACAs will be used during live fire. All ACAs will be activated through the 52ID FSE. Aircraft will not under fly indirect fire gun-target lines. Lateral Separation. Indirect fires and CAS may attack different targets simultaneously if the indirect fire GTL and CAS target are coordinated with an informal / formal ACA. During live fire, CAS must also adhere to the live fire CAS minimum altitudes.

c. Time Separation. When below 5,000 feet Above Ground Level (AGL), CAS, artillery, and mortars may attack the same target provided a minimum of 30 seconds separation between the last round on the ground and the first aircraft delivered ordnance on the target. Aircraft will not violate active GTLs or live fire CAS minimum altitudes.

d. Altitude Separation. CAS, artillery, and mortars may attack the same target simultaneously using Maximum Ordnance or ORD 1 procedures while adhering to live fire CAS minimum altitudes. Units may use the Maximum Ordnance procedure provided aircraft remain at least 1,000 feet above the direct and indirect fire trajectories and their effects. Units will not establish a single Maximum Ordnance over their sector / zone for an entire battle. When using ORD 1 procedures, aircraft will remain at least 25 degrees laterally separated from the artillery GTLs until crossing the target area.

e. CAS Minimum Altitude. The minimum altitude for all CAS employment during live fire operations varies across the battlefield. CAS employed within 8,000 meters of the FLOT requires a minimum altitude of 5,000 feet AGL based on the Vertical Hazard Distances (VHD) of active direct fire SDZs. The VHD width is equal to the width of all active SDZs. CAS employed greater than 8,000 meters from the FLOT may employ as low as 300 feet AGL unless the target is within the range of indirect fires, in which case the minimum altitude is 3,000 feet AGL.

f. Minimum Safe Distances. The minimum safe distances for bombing and strafing for both fixed and rotary win aircraft are taken from Table 37 in the Joint Fire (J-FIRE) (FM 3-09.32) dated 20 DEC 2007.

g. Applicability. This table establishes minimum distances that ground JTAC / TACP personnel may be safely located in relation to the target / impact area of standard munitions. The area within the limits established by this table is designated the danger area. Minimum safe distances are from the target / impact area, and for a ground function only (no airburst munitions). Additionally, range features can affect weapon impact points, and must be factored into planning (e.g. high terrain short of the intended target may intersect weapon fly out trajectories, causing short impacts). Only the weapon listed may use the distances contained in the table and aircrew will adhere to specific remarks for a weapon if they are not listed. Only the following aircraft may utilize the MSD table: A-10, AC-130, AV-8B, B-1, B-2. B-52. F-15E, F-16, F/A-18, AH-1, and UH-1.

h. Parameters Assumptions. Aircraft attack parameters must be at or below 15,000 feet AGL for level or diving deliveries, and at or below 20,000 feet AGL, 540 knots true air speed (KTAS) for level LGBs. For GBU-31/32/38/39 munitions from a bomb-on-coordinate (BOC) mode, altitude and release airspeeds are limited by range regulation parameters and weapon batter life. B-1, B-2, and B-52 must reference Note 5, and AC-130 must reference Note 6.

i. Multiple Deliveries. Ripple / string/ stick deliveries must be less than 500 feet total length, with a maximum of 6 weapons. For IAMs deliveries, a 250 foot maximum impact distance from the primary target location will be used for all pattern-managed drops.

j. Ammunition / Bullet Numbers. For AC-130 operations, ammo numbers are taken from AFI 11-2AC-130v3. Ricochet fan numbers are SAFE RANGE-derived for 20mm and 30mm (extrapolated for 25mm) fighter strafe passes: single drop fighter strafe MSD numbers are Joint Munitions Effectiveness Manual (JMEM) derived. Helicopter ricochet fans are SAFE RANGE-derived and MSD numbers are JMEM derived.

k. Rocket Deliveries. Fixed-wing parameters: at or below 15,000 feet AGL, 540 KTAS, 15-degrees of dive, 8,000 feet slant range. Rotary wing parameters: running / diving fire with 5-20 degree dive angle, 2 round burst, forward flight.

l. Not all munitions / platforms currently available in the inventory have MSD values associated with them. This is a limitation of the JWS software used to calculate the MSDs. As JFIRE is revised in the future, expect MSDs for those munitions / platforms to become available.

Minimum Safe Distances for Ground Parties (Training Use Only: Live Fire)			
Weapon	**MSD (meters/ft)**	**Ricochet Fan (Deg/Meters/Feet)**	**Notes**
Guided Munitions – All Platforms			
GBU-10 (2,000-lb LGB)	1800m/5904’		1, 4
GBU-12 (500-lb LGB)	1000m/3280’		1, 4
GBU-16 (1000-lb LGB)	1000m/3280’		1, 4
GBU-51 (500-lb LCDB LGB)	N/A		1, 4
GBU-10/12/16/51 Inert	500m/1640’		1, 4
Guided Munitions – All Platforms			
GBU-31 (2000-lb JDAM)	1800m/5904’		1
GBU-32 (1000-lb JDAM)	1000m/3280’		1
GBU-38 (500-lb JDAM)	1200m/3936’		1
GBU-38(v)4 (500-lb LCDB JDAM)	N/A		1
GBU-39 (250-lb SDB)	N/A		1
GBU-31/32/38 Inert	500m/1640’		1
GBU-39 Inert	N/A		1
Fighters / Helicopters			
Mk-82 LD/HD (500-lb)	1200m/3936’		
Mk-83 (1000-lb)	1000m/3280’		
Mk-84 LD/HD (2000-lb)	1800m/5904’		
Mk-82/83/84 Inert	500m/1640’		
CBU-87/103	1700m/5576’		3
CBU-994/1004, Mk-204	N/A		
BDU-33/38/45/50/56	500m/1640’		
Mk-76	500m/1640’		
LGTR I	500m/1640’		1, 4
AGM-65G (WDU-24)	1300m/4264		1
2.75” Rockets WP or HE	700m/2296’	60°/3100m/10168’	2
2.75” Rockets Inert	500m/1640’	60°/1800m/5904’	2
20 mm (Fighter)	500m/1640’	60°/2700m/8856’	2
25 mm/30 mm (Fighter)	500m/1640’	60°/2600m/8528’	2
7.62 mm (Helo)	500m/1640’	All Headings	2
.50 cal/20 mm/30 mm (Helo)	500m/1640’	N/A	2
AC-130			
25 mm	500m/1640’ 400m/1312’	60°/2000m/6560’	6
30 mm	N/A	N/A	6
40 mm	500m/1640’ 300m/984’	None	6
105 mm	650m/2132’ 600m/1968’	60°/700m/2296’	6
Med Alt Bombers – GP Bombs (Live or Inert)			
B-1: Mk-82	1200m/3936’		5
B-1: Mk-84	1800m/5904’		5
B-52: Mk-82	3000m/9840		5
B-52: Mk-84	3500m/11480’		5
Other Munitions			
AGM-130 (2000-lb TV guided)	N/A		
AGM-154 (JSOW)	N/A		
AGM-158A (JASSM)	N/A		
Zuni (5” Rockets)	N/A	N/A	
AGM-114 K Hellfire	N/A		
AGM-114 K2A Hellfire	N/A		
AGM-114 M Hellfire	N/A		

AGM-114 N Hellfire	**N/A**		

AGM – air-to-ground missile
BDU – bomb dummy unit
cal – caliber
CBU – cluster bomb unit
GBU – guided bomb unit
HD – high drag
HE – high explosive
JASSM – joint air-to-surface stand-off missile
JDAM – Joint Direct Attack Munition
JSOW – joint stand-off weapon,
LCDB – low collateral damage bomb
LD – low drag
LGB – laser guided bomb
LGTR – laser guided training round
SDB – small diameter bomb
WP – white phosphorous

Notes:

j. Guided Weapon Hazard Areas – Hazard areas for guided weapons (AGM-65, LGBs, and JDAMs) are highly dependent upon launch conditions and in some cases coordinate accuracies. Coordinate quality (TLE) and passage presents a significant risk to ground personnel for malfunctions (such as fin failures) are not included, with the assumption that malfunctioning weapons have the same probability of impacting any point within the hazard area. JTACs may tactically derive coordinates, but these coordinates must be cross-checked and confirmed using all available means to include target coordinates listed in range supplements, if applicable. Likewise, aircraft may tactically derive coordinates (via TGP, SAR radar, etc.) for actual employment with bomb on coordinate weapons. Aircraft-derived coordinates must also be cross-checked and confirmed as well. Guided weapons distances are not platform-specific. Minimum distances apply to all delivery platforms; however, release parameters must be IAW the parameter assumptions detailed above.

k. Bullet / Rocket Ricochet fans – The ricochet fan will be dependent upon many variables, such as bullet / rocket weight and shape, impact angle, speed, etc. Thus, the ricochet fan must be applied to each target so that ground personnel are not within the ricochet fan. The aircraft flight path / firing direction will bisect the ricochet fan – a 60 degree fan will be drawn 30 degrees left of the flight path / firing direction.

l. CBU-87/103 – Data is for intact canister and is based on a 209 foot x 183 foot pattern size. Delivery assumptions are for 4 canisters or less, 75 feet spacing, 1,200 feet height of function, 2,000 revolutions per minute spin. For patterns that exceed these parameters, the MSD must be expanded to include the larger pattern. Distances indicated must be added to the radius of the calculated bomblet pattern. CBU-87/103 data is for fighters only and is restricted to fighter employment only.

m. Environmental Factors for Laser-Guided Weapons – Data assumes environmental conditions are conducive to seeker / weapon acquisition, and reflected laser energy is sufficient to guide the weapon to the target.

n. Medium Altitude Bombers (B-1, B-2, B-52) Guided Weapons – Bombers must adhere to Note 1 above for guided weapon employment. The maximum pattern distance for IAM weapon deliveries using pattern management tactics will not exceed 250 feet from the intended target passed from the JTAC. GP Bombs – Medium altitude bombers conducting aircraft computed MK-82/MK-84 deliveries are limited to 30,000 feet AGL and below, airspeeds not exceeding 540 KTAS, and maximum stick length of 500 feet and 6 weapons. Weapon releases above that altitude will not meet weapon accuracies used in the MSD calculations and should not be employed with this table. Cross-wind Limits – A 50 knot direct cross-wind was assumed in the calculations. Weapons should not be delivered using the table numbers when the cross-wind component exceeds 50 knots at release. B-2 deliveries are restricted to GBU-31/38 only.

o. **AC-130 Parameters and Restrictions: When radar is the primary fire control sensor, fire no closer to ground party than 650 meters for 105mm TP / HE, 500 meters for 40mm HEI and 25mm TP / HEI. When IR or TV is the primary fire control sensor and the system has been tweaked (minimum 750 meters away from friendly forces) fire no closer to ground parties than 600 meters for 105mm HE, 400 meters for 105mm TP, 300 meters for 40mm HEI, and 400 meters for 25mm TP / HEI. For ricochet risk mitigation with TP ammunition, the AC-130 will use No Fire Zones (NFZs) if ground party is within 700 meters for 105mm TP and 2,000 meters for 25mm TP. NFZs are relative to ground party location from target and are based on aircraft heading, not gun-to-target line. To compute the no-fire aircraft headings, take the heading from friendly position to the target and subtract 60 degrees to define the beginning of the NFZ. Then subtract an additional 60 degrees to define the end of the NFZ. Source Data – Assumptions, calculations, etc. for the MSD table can be requested via email: acc.a3tw@langley.af.smil.mil or phone DSN 574-5896, HQ ACC/A3TW.**

71. **Personnel Reconstitution: Casualty Evacuation in the Offense. In the offense, evacuation begins when the FLOT advances far enough forward to allow medics to safely evacuate casualties. The controlling OC/T marks the casualty cards indicating time and OC/T call-sign as per Force-on-Force EXOP. Casualty Evacuation in the Defense. In the defense, evacuation begins when the entire BDE/TF is in "GREEN and CLEAR" for direct fire. Cards will be marked with the time. Died of Wounds (DOW). DOWs will be reported, but not evacuated. In between the day/night defense battle, Soldiers at the Task Force level are evacuated to Role I.**

72. **Vehicle Reconstitution: Simulated Battle Damage (SBD). Mobility and firepower may be reconstituted at the company trains if the company maintenance team has required personnel, tools, and parts (on-hand or on-order) to affect the necessary repairs. Return of Vehicles to Units. Vehicles recovered to the UMCP will not return to their parent unit until they establish communications with that unit. Cross-Loaded of Ammunition. Ammunition will not be cross-leveled from catastrophic kills, but may be cross-leveled from vehicles identified as mobility or firepower kills. Disposition of Destroyed Vehicles. Destroyed vehicles remain in place unless under the control of an OC/T. Participation in LOGPAC. Vehicles and crews may participate in LOGPAC operations even though they are Catastrophic or SBD Kills. Flight Reentry. Vehicles reconstituted prior to change of mission can reenter the fight. Catastrophic Kills can only reenter the fight upon approval of an OC/T Team 07.**

73. **Ammunition. Live to blank transition responsibility. Live ammunition download is a rotational unit's responsibility. After completing live fire operations, a member of the rotational unit's chain of command will certify in writing to designated company level O/CTs confirming all live ammo has been removed from all vehicles, weapons systems, and personnel. O/CTs will spot check to ensure unit compliance prior to any vehicle returning to the NTC Division Support Area (DSA) or conducting Force on-Force operations.**

74. **Ammunition Cross-Level. Ammo will not be cross-leveled from catastrophic kills, but it may be cross-leveled from vehicles determined as SBD kills. Mortar and artillery ammo may be crossed-leveled off mortar carriers and self-propelled howitzers that must be evacuated to the trains.**

14-05 Ultimate Training Munitions:

1. **Safety. The Army, under the Close Combat Mission Capability Kit (CCMCK) program, awarded the contract to the company Ultimate Training Munitions. At NTC, Operations Group manages the Man Marketing (force on force) capability of the UTM programs. The term SIMMUNITIONS is no longer in use and reflects a different company and program. Risk Management. Man Marking Mission Risk Management Work Sheet complete and briefed. Reporting and Managing. Man Marking training will be reported and managed by the RTU's OC/Ts.**

2. **Minimum Distance. No engagements within 2 meters.**

3. **Additional Personal Protective Equipment. All RTU and COEFOR Soldiers, host nation role players, civilians on the battlefield, and OC/Ts must wear face, throat, and groin protection in addition to the PPE already required for operations. All exposed skin will be covered. Inspection of Equipment. Face, throat, groin protection, and exposed skin covered will be inspected by the OC/Ts prior to execution of the exercise.**

4. **Man Marking In Conjunction with Live Fire SDZ. Should the Man Marking training occur in conjunction with a live fire, the composite SDZ for other munitions takes precedent. All participants must wear IOTV with SAPI plates and helmet in addition to the PPE and report IAW LFX "Fit to Fight" requirements.**

5. **Man Marking SDZs. Man Marking rounds' SDZs will be established and verified by the OC/T team's primary trainer to ensure the affected area within the box has no personnel operating within that SDZ that are not wearing the appropriate PPE.**

6. **Engagement Requirements:**

   Personnel Protective Equipment (PPE). PPE worn by all RTU and COEFOR Soldiers, host nation role players, civilians on the battlefield and OC/Ts.
   Red Bullets. COEFOR have Red Bullets.
   Blue Bullets. BLUFOR have Blue Bullets.

7. **MILES Engagement Requirements:**

   a. **Wearing of MILES. All personnel will continue to wear MILES harnesses and halos for OC/T adjudication and to allow weapon systems above 5.56mm to be used during CCMCK operations and to achieve effects from those weapon systems. Soldiers and Vehicles with non-operational MILES will be adjudicated as safety MILES kills. MILES is necessary to control the training scenario for safety purposes, and to replicate effects of weapons above the caliber of 5.56mm.**

   b. **Use of Weapons Above 5.56mm. COEFOR and BLUFOR Soldiers with weapon systems above 5.56mm will continue to use blank ammunition in support of the MILES system. MILES Alarm. Any Soldier with a MILES alarm will continue to be treated as a casualty using the MILES card.**

8. **UTM Casualties: Shot by Ultimate Training Munitions. Personnel shot by UTM will not use the MILES card for their injury. Their injury will be assessed by the OC/T on the ground with respect to where the UTM round impacted. Soldiers will not remove any PPE upon being shot. All PPE will remain on the Soldiers to include during casualty care until the training scenario is complete.**

9. **Additional Requirements. All personnel participating in a UTM fight will carry a 3x5 card with their name on it that an OC/T can fill out with the type of injury, DTG and who inspected the injury.**

10. **Soldiers must remove SAPI plates during the training in order to feel rounds impacting on the torso. Due to the small pain signature of the UTM round, OC/Ts must remain vigilant in order to properly adjudicate legitimate gunshot wounds. A safety brief will be given by the OC/Ts to all personnel prior to execution of the training. OC/T teams will conduct a rehearsal with the civilians on the battlefield and the COEFOR prior to execution of the training.**

Chapter 15
SOF

CHAPTER 15 – SOF

1. **Overview. Special Operations Forces (SOF) from within the U.S. Special Operations Command (USSOCOM) participate in eight to ten rotations per fiscal year. These elements include; U.S. Army Special Forces, U.S. Army Rangers, Marine Corps Special Operations (MARSOC), Navy SEALS, Air Force Special Operations Forces (AFSOF), and various SOF Aviation units. Each SOF Rotational Training Unit (RTU) has its own external element that is responsible for performing Observer Coach Trainer (OC/T) duties during the rotation.**

2. **Foreign SOF. Foreign SOF may also participate in training at the NTC; however, they must be accompanied by a sponsoring U.S. SOF unit who is responsible for their actions. Any foreign unit training at the NTC requires HQDA, G-3/5/7, approval. Foreign unit participation is covered more in-depth in AR 350-50 Combat Training Center Program.**

3. **Purpose. The integration and interoperability of SOF and Conventional Forces is of paramount importance within the contemporary operating environment. Each force has its own unique capabilities which, when combined, can achieve objectives not otherwise attainable. SOF OC/Ts should coach their elements towards working with conventional forces on a daily basis whether it is operationally or in the sharing of information. USSOCOM Publication 3-33 v. 3, *Multi-Service Tactics, Techniques, and Procedures for Conventional Forces and Special Operations Forces Integration and Interoperability,* is a great tool to help point the SOF RTU in the right direction.**

4. **SOF Participation. This chapter is intended to address SOF-specific procedures that are not covered elsewhere in the NTC EXOP. The SOF RTU must abide by all rules outlined in the EXOP. The Commander NTC Operations Group (COG) is the approving authority for all SOF operations at the NTC and the only authority who may grant exceptions to the EXOP outlined in this chapter.**

15-1 SOF Observer Coach / Trainers (OC/T)

1. **Minimum Guidelines. At a minimum, every SOF element in the maneuver area will have one OC/T who has either completed the OC/T Academy at the Joint Readiness Training Center (Special Operations Training Detachment) or has attended the two week permanent party or two day Augmentation OC/T course run by the OC/T Academy at the National Training Center. No exceptions to this rule will be granted.**

2. **SOF OC/T Duties and Responsibilities: SOF OC/T duties and responsibilities include but are not limited to the following:**

a. **Presenting an EXROE/Safety briefing to the SOF RTU prior to TD1. Every member of the SOF RTU will receive this briefing. There are no exceptions. Assisting the SOF RTU with the proper fitting and zeroing of MILES equipment. Issuing members of the SOF RTU their MILES casualty cards. Name, rank and unit will be written on the envelope. SOF OC/Ts will also issue BDA packets for each vehicle of the element they are covering down on. Observing all briefings between their element and their higher HQ.**

b. **Observing all mission planning, rehearsals and key events prior to execution. Acting as the outgoing SOF element and perform RIP TOA with their element prior to TD01. Conducting safety inspections of all HLZ's and DZ's prior to their utilization by the SOF RTU. When conducting dismounted cross country movement, SOF OC/Ts will move as a member of the element and pass all appropriate hand and arm signals. Passing all standard NTC reports to the SOF Tactical Analysis Feedback Facility (TAFF) in a timely manner. Maintaining a working knowledge of the entire NTC EXOP.Conducting initial coordination with town OICs/leadership 24 hours in advance (5 Ws). SOF OC/Ts will notify the Town OIC and/or Town Leadership at least one hour prior to SOF RTU elements entering a town. Coordination should include the SOF RTU's task and purpose, locations where the SOF RTU intend to operate, and personnel they intends to contact. Town OICs may delay SOF RTU entry into a town in order to meet the minimum one hour coordination requirement.Ensuring that all risk assessments are completed to standard IAW FM 5-19 Composite Risk Management, and NTC Regulation 385-10, *National Training Center and Fort Irwin Safety Program*. *IMMEDIATELY* passing any information pertaining to the CG or COG's CCIR to the SOF TAFF.**

15-2 SOF OC/T Resupply

1. **General. Due to the nature of some SOF missions such as Special Reconnaissance (SR), the SOF OC/T must be on the ground within close proximity of the SOF RTU 24/7 and under no circumstances can the SOF OC/Ts actions compromise the location of the SOF RTU element. When the SOF OC/T needs resupply for batteries or Class I, he must link up with his support driver. The minimum distance to conduct link-up with the support driver is one kilometer. The SOF OC/T should use all available cover and concealment along his route to and from the link-up location. SOF OC/T re-supply should be conducted during hours of limited visibility if the tactical situation permits.**

15-3 MILES

1. **Restrictions. All SOF RTU personnel will wear MILES while in the maneuver area during rotation (TD1-TD14). If patrol or boonie caps are worn during the conduct of operations, a MILES IWS will be affixed to the headgear. Refer to EXOP Chapter *1-4 thru 1-9* of the EXOP for additional information.**

15-4 Uniforms

1. **General. SOF RTU elements may wear civilian attire, service duty uniform (Army, Marine, Navy or Air Force), modified duty uniform (MODs), DCUs, theater specific uniform (eg. Multicams), or flight suits during the conduct of operations while in rotation. At no time will members of the SOF RTU wear MODs or flight suits anywhere within the Fort Irwin Cantonment Area (Main Post) prior to, during or after rotation.**

2. **Grooming Standards. SOF RTU personnel may operate under relaxed grooming standards, adding realism to training, at the discretion of the SOF RTU CDR. Units wishing to operate in civilian attire or with relaxed grooming standards must include this in their pre-rotational brief to the COG.**

15-5 SOF Airborne Operations

1. **Drop Zone Responsibilities. The responsibility of surveying and running drop zones for SOF RTU airborne operations prior to and during rotation falls on the SOF RTU. All static line airborne operations and drop zones will be run IAW USASOC Regulation 350-2, *Training Airborne Operations*; IAW FM 3-05.210, *Special Forces Air Operations*; FM 3-21.220, *Static Line Parachuting Techniques and Training*; and the Fort Irwin Range Regulation. All HAHO and HALO airborne operations will be run IAW FM 3-05.211, *Special Forces Military Free-fall Operations*, and the Fort Irwin Range Regulation. A copy of the Airborne OPORD, current risk assessment, and current DZ Survey must be submitted to the 52nd ID TOC NLT 48 hours prior to TOT for COG approval for any airborne operation.**

2. **DZ Party. The SOF RTU is responsible for setting up the DZ during all phases of their deployment. If the SOF RTU wishes to jump into the NTC from home station, they will ensure that the DZ party is a part of their Quartering Party. Prior to TD 1, the SOF RTU will open and close the DZ through Fort Irwin Range Control. During STX and FOF the SOF RTU will have a designated DZ Party including a malfunction NCO and dedicated medical support as a part of their support package that will set up the drop zone.**

3. **HALO / HAHO DZs. The SOF RTU is authorized to survey DZs for short term use to support HALO and HAHO operations. These DZs must be surveyed and approved 48 hrs prior to TOT.**

15-6 Fast Rope Insertion and Extraction System (FRIES)

1. **Requirements. SOF RTU units wishing to utilize FRIES as a means of infiltration will do so IAW FM 3-05.210, Special Forces Air Operations, and USSOCOM regulation 350-6, *Training Special Operations Forces Infiltration/Exfiltration Operations*. Rotational SOF units must attempt to complete the prerequisite training prior to their arrival at the NTC. The SOF RTU will provide a memorandum to NTC SOF with the names of all personnel who have completed FRIES training prior to the SOF RTU's arrival at the NTC. During infiltration, SOF OC/Ts will place themselves in the stick but will not interfere with the SOF RTU mission. Either the SOF OC/T or SOF Exercise Support Group (ESG) personnel will conduct a safety inspection of the proposed FRIES infiltration location prior to execution.**

15-7 Rotary Wing Seats Out Waiver

1. **Requirement. A request for Seats Out Waiver and completed Risk Assessment will be turned in by the SOF RTU prior to TD 01 for NTC CG approval before any rotary wing operations may take place where the standard seats and safety belts are not utilized.**

2. **Governing Regulations. IAW AR 95-1, Aviation Flight Regulations, the SOF RTU may conduct airborne, rappel, FRIES and SPIES operations from rotary wing platforms without troop seats installed. SOF OC/Ts will ensure that "seats out" is specifically addressed in the mission Risk Management Worksheet and that identified risk mitigation safety procedures put in place by the mission commander are adhered to. All night FRIES operations will be regarded as medium risk, at a minimum, as per FM 3-05.210, Special Forces Air Operations.**

3. **Risk Mitigation and Approval Authority. If the SOF RTU wishes to utilize a rotary wing platform with troop seats out as a means of infiltration and is not conducting one of the operations above, the RTU commander must conduct a thorough Risk Management Worksheet for each mission and request a seats out waiver through their chain of command. The approving authority for the seats out waiver is the first MG/O8 in the chain of command (CG, USASFC; CG, MARSOC; CDR, NAVSPECWAR; and CDR, USASOC for Rangers). Seats Out waivers must be approved and returned to the SOF RTU prior to arrival at the NTC. No exceptions will be made. NTC CG retains authority to deny seats out execution based on RM assessment.**

15-8 RAVEN A/B and Other Operations

1. **Training Requirement. RAVEN operators must attend the AC2 briefing on RSOI 01 and flight training between RSOI 2-4 in order to fly the RAVEN in support of their operations during rotation. All mission requests will be submitted to the 52ID TOC NLT 1000 hours the day prior to the anticipated launch date. Every RAVEN will be outfitted with a Falcon Tracker which allows the RAVEN to recovered in a timely manner by means of RDF should it experience mechanical problems and go down out of view of the operator. The Falcon Tracker is available from the RAVEN Master Trainer with the Army Center of Excellence (CI2C) office on Fort Irwin. *Refer to chapter 2-3 of the NTC EXOP for additional information.* Channels 5-8 are the only authorized RAVEN channels for NTC *(Channel 3 approved by exception only)* Other SOF UAS, platforms may be utilized at the NTC with prior coordination and approval by the COG. Refer to Chapters 2-3 and 6-2 of the *NTC EXOP* for additional information on UAS employment at the NTC.**

15-9 Cross Country Motorcycles (CCM) and All Terrain Vehicles (ATV)

1. **Authorization. SOF RTUs are authorized to operate CCMs and ATVs at the NTC during rotation. These vehicles will abide by the speed limits for wheeled vehicles outlined in Chapter 1-11 of the EXOP. All CCM and ATV operators will be licensed at home station and a memorandum certifying their training will be forwarded to NTC SOF Plans. Operators must also be certified to operate their CCM and ATV during hours of limited visibility with NOD's. Operators will wear gloves, protective eyewear, and ballistic helmet. (D.O.T. approved protective helmets are also authorized) If the operator's MILES is activated the SOF OC/T will assess the CCM or ATV accordingly.**

15-10 Indigenous Operating Vehicles (IOV)

1. **Authorization. Rotational SOF elements are authorized to operate IOV's in civilian attire while in the box in support of the SOF Commander's training objectives. If the IOV is a contracted vehicle and therefore unable to be instrumented with MILES, the occupants of the vehicle will operate it with the windows down and will wear the MILES torso harness. A SOF OC/T must ride in the back seat of the vehicle to adjudicate additional battlefield effects as they arise.**

15-11 Non-Standard Tactical Vehicles (NSTV)

1. **Authorization. The SOF RTU may utilize NSTVs while conducting operations during the rotation. NSTVs are modified civilian vehicles (SUV or pick-up truck) that are used for tactical purposes. An example NSTV would be a pick-up truck with a gun mount in the bed for a crew served weapon. If the NSTV is not equipped with a compatible MILES system, all occupants will wear the MILES torso harness with the windows down. SOF RTU personnel are authorized to conduct live-fire from NSTVs with the appropriate Composite Risk Management Worksheet and Safety Waiver approval prior to conducting of the training.**

15-12 SOF Sniper Weapon Systems (SWS)

1. **General. SOF RTU elements have a wide variety of SWS at their disposal that are organic to their unit. Due to the limitations of the MILES system, weapon transmitters are not available for all SWS.**

2. **Constraints. If the SOF RTU wishes to use the M107, .300 Win mag., or any other organic SWS which does not have a compatible MILES transmitter, the SOF RTU and SOF OC/T will take the following actions; The SWS operator will designate his target to the SOF OC/T. The SOF OC/T will identify and confirm the target. The spotter or another member of the SO position will remove the BFA from their M4 and load one blank round. The spotter or another member of the SO position will orient his weapon 45 degrees from the gun target line in a safe direction and fire one round. The SOF OC/T will then adjudicate the shot. This process will be repeated until the engagement is**

complete. The spotter or another SO position member will not engage targets with his weapon until he has replaced his BFA. Additional SOF OC/Ts. Time permitting and due to the distance between the SOF position and the target area, every attempt should be made to place another SOF OC/T in the target area to complete the adjudication. The SOF OC/T in the SO position will relay target description to the SOF OC/T in the target area who will then complete the adjudication once a report is heard from the spotter's or another SO postion member's weapon. At no time will the SWS operator fire blank .50 cal from the M107 or any other .50 cal SWS.

15-13 Non-Standard Weapons

1. **Authorization. SOF RTU elementCT-OIS wishing to use non-standard weapons during rotation which are on their MTOE may do so. However, the NTC must receive notification NLT D-120 so that the appropriate MILES equipment can be modified for use on the weapon or a training aid can be devised to replicate the weapons signature. Weapons that fire the 40mm grenade will not be used during force-on-force because there is no accurate way to replicate their effects. Additionally, sub-machine guns and pistols will not be used during force on force but they may be utilized during Sim\munitions/UTM engagements.**

15-14 Simunitions / UTM (Man-Marker Round)

1. **Restrictions. Simunitions and UTM MMR are authorized for use during rotation, but require 48-hours prior notification with the COEFOR and the town OIC to ensure the distribution, use, and wear of PPE, 'blue barrels', and Simunition/UTM ammunition. To the maximum extent possible, the SOF RTU will utilize blue marking rounds and the COEFOR will use red marking rounds.**

15-15 SOF Medics / Casualty Care

1. **General. SOF medical personnel receive extensive training in advanced trauma management, minor surgery and patient care which allows them to provide medical treatment to wounded personnel on the battlefield and in austere environments above and beyond that of a medic (68W) or combat lifesaver. SOF qualified medics must be one of the following; Special Forces Medic (MOS 18D); Special Operations Independent Duty Corpsman (NEC 8403); or Air Force PJ (AFSC 1T2X1), who must have attended the Special Operations Medical Training Branch and are working within USASOC, MARSOC, NAVSOC, or AFSOC. SOF medics may treat MILES casualties as outlined below:**

2. **Urgent. SOF RTU medical personnel may provide treatment to an urgent patient for a period of up to 12 hours if they have the correct amount of Class VIII on hand and the tactical situation does not permit evacuation to a Level 2 treatment facility with-in the allotted two hours before being further assessed as DOW.**

3. **Priority. SOF RTU medical personnel may provide care to a priority patient for a period of up to 24 hours if they have the correct amount of Class VIII on hand and the tactical situation does not permit evacuation to a Level 2 treatment facility with-in the allotted four hours before being further assessed as DOW.**

4. **Routine. Depending on the severity of the injury, casualties with routine injuries may RTD after treatment by a qualified SOF medic. If the patient requires additional medical attention above what the SOF medic can provide and the tactical situation or location prevents evacuation to a Level 2 treatment facility, the SOF medic can sustain the casualty for a period of up to 36 hours provided he has the appropriate amount of Class VIII on hand. The SOF OC/T will inform the SOF medic if the routine casualty requires Level 2 treatment at the time of injury.**

Chapter 16 Implementing Directives (This chapter is only for operations group use and will not be released to non-tenant units of the national training center)

Chapter 17 COEFOR (Not Published to Rotational Units)

Chapter 18
List of Acronyms

AAG- Army Artillery Group
AAR- After Action Review
AC- Airspace Control
ACA- Airspace Coordination Authority
ACFT- Aircraft (also A/C)
ACM- Airspace Control Measures
ACMRs- Airspace Coordination Measure Request
ACO- Airspace Coordination Order
ACP- Air Check Point; also Alternate Command Post; also Assault Command Post
ADA- Air Defense Artillery
ADW- Air Defense Warning
AGES- Air to Ground Engagement System
AGL- Above Ground Level
AI- Air Interdiction
APG- Aviation Procedure Guide
ARD- Air Raid Detachment
ARF- Aerial Reaction Force
ASB- Area Support Battalion/Brigade
ATC- Air Traffic Control
ATO- Air Tasking Order
ATS- Air Traffic Services
ATWESS- Anti-Tank Weapons Effects Signature Simulator
AVLB- Armored Vehicle Launched Bridge
AVOs- Aerial Vehicle Operators
AWE- Area Weapons Effects
BAE- Brigade Air Element
BESS- Battlefield Effects Simulation System
BLAAF- Bicycle Lake Army Airfield
BMNT- Begin Morning Nautical Twilight
BTG- Brigade Tactical Group
BTI- Blackbird Technologies
CAC- Combined Arms Center
CAFAD- Combined Arms for Air Defense
CAHA- Captured Ammunition Holding Area
CALYX- Cell phone exploitation device
CAP- Connection Approval Process
CAR - Combined Arms Reserve
CARC- Chemical Agent Resistant Compound
CAS- Close Air Support
CBI- Combat Battle Instructions
CBRN- Chemical, Biological, Radiological, and Nuclear
CEA- Captured Enemy Ammunition
CENTCOM- Central Command
CIS - Core Instrumentation System
CIVCAS- Civilian Casualties
CLS- Combat Life Saver
CMU- Concrete Modular Units

CNV- Crypto Net Variable
CoC- Chain-of-Command
COE- Contemporary Operating Environment
COEFOR- Contemporary Operating Environment Forces
COFM- Comparison of Forces Measure
COG- Commander of Operations Group
COM- Change of Mission
COMMEX- Communications Exercise
CP- Contact Point, Check Point; Command Post
CPOF- Command Post of the Future
CREW- Counter RCIED Electronic Warfare System
CRS- Commercial Remote Sensors
CRMWS -Composite Risk Management Worksheet
CSS- Combat Service Support
CTD- Combat Tracker Dog
CTM- Change To Mission
CTS- Combat Training Squadron
CUB- Commander's Update Brief
CVKI- Combat Vehicle Kill Indicator
CWIED- Command Wire IED
DART- Downed Aircraft Recovery Team
DBIED- Deep Buried IED
DCI- Data Communication Interface, Director of Central Intelligence
DES- Demolitions Effects Simulators
DESRAD- Desert Radio
DEW- Division Early Warning
DFSCOORD-Direct Fire System Coordinator
DISE- Division Intelligence Support Element
DRT- Division Recon Team
DS-2- Decontaminating Solution No.2
DSP- Detain, Suspect, Protect
DTG- Division Tactical Group
DWU- Digger Warning Unit
EARF- Electronic Attack Request Form
ECM- Electronic Countermeasures
ECT- Environmental Clean-Up Team
ECU- Environmental Control Unit
ED - Enveloping Detachment
EFP- Explosively Formed Penetrator
EOCA- Explosive Ordinance Clearing Agent
ESM- Electronic Support Measures
EW- Electronic Warfare
FAA- Federal Aviation Administration
FAC- Forward Air Controlling Aircraft
FAC-A- Forward Air Controller- Airborne
FB - Forward Boundary
FD - Forward Detachment
FDC- Fire Direction Center
FEBA- Forward Edge of Battle Area
FFE- Fire For Effect
FIFMO- Fort Irwin Frequency Management
FLOT- Forward Line of Troops
FMC- Fully Mission Capable
FSE- Fire Support Element
FTF- Focused Targeting Force
FTT- Field Tactical Trainer

FVEY- Five Eyes
GARS- Global Area Reference System
GFW- Green Flag-West
GRD- Ground Raid Detachment
GRRIP- Global Rapid Response Information Package
GRS- Gunner Restraint System
GSR/R- Ground Surveillance Radar and Reconnaissance
GTL- Gun-Target Line
HCLOS- High Capacity Line of Sight
HCTs- HUMINT Collection Teams
HET- Heavy Equipment Transporter
HIIDE- Handheld Interagency Identity Detection Equipment
HPT- High Payoff Target
HRI- High Risk of Isolation
HTO- Hybrid Threat
HVT – High Value Target
IAW- In Accordance With
ICAM- Chemical Agent Monitor
ICE- Inter Coastal Electronics
IDP – Internally Displaced Person
IEDES- Improvised Explosive Device Effects Simulator
IFCAS- Indirect Fire Casualty Assessment Suppression
IMC- Irwin Military City
IMD- Independent Mobility Detachment
IMDC- Isolated/Missing/Detained/Captured
INTREPS- Intelligence Reports
INTSUMS- Intelligence Summaries
IP- Intermediate Point
IR- Infrared
ISM- Intelligence Synchronization Matrix
IUMARKS-Interim Unit Maintenance Aerial Recovery Kit
IWS- Individual Weapon System
JAAT- Joint Air Attack Team
JCA- Jamming Control Authority
JEL – Joint Effects List
JNN- Joint Network Node
JPEL – Joint Prioritized Effects List
JTAC- Joint Terminal Attack Controller
L/LU- Litter, Litter Urgent
LAN- Local Area Network
LD/LC- Line of Departure/Line of Contact
LCMR- Lightweight Counter Mortar Radar
LIC- Low Intensity Conflict, LAN In a Can
LNO- Liaison Officer
LOA – Limit of Advance
LOS- Line of Sight
LOS- Loss of Signal
LRP- Long Range Patrol
LRS- Long Range Surveillance
LSAC- Low Signature Armored Cab
LSRD- Long Range Surveillance Detachment
LTD- Laser Target Designator
LTP- Leader Training Program
M/FP/C kill- Mobility, Fire Power, Commo Kill
MACE- Military Acute Concussion Evaluation
MCB- Mine-Clearing Blade

MCR- Mine-Clearing Roller
MDD- Mine Detection Dog
MDI- Mission Data Interface
MDT- Mine Detonation Trailer
MELIOS- Mini Eyesafe Laser Infrared Observation Set
MES- Mine Effects Simulator
MET- Meteorological [data]
MGRS- Military Grid Reference System
MGSS- Main Gun System Simulator
MIBN- Motorized Infantry Battalion
MICO- Military Intelligence Company
MIKS- Man Instrumented Kits
MITS- Mobile Independent Target Systems
MLC- Military Load Class
MOPMS- Modular Pack Mine System
MRC- Motorized Rifle Company
MRE- Mission Readiness Exercise
MSD- Minimum Safe Distance
MSL- Mean Sea Level
MTI- Motion Tracking Indicator
MTO- Message to observer
IWS- Man Worn Laser Detector
NAAK- Nerve Agent Antidote Kit
NEC- Network Enterprise Center
NET- New Equipment Transition
NEW- Net Explosive Weight
NFA- No Fire Area
NLT- No Later Than
NMC- Non-mission Capable
NUWC- National Urban Warfare Center
NVD- Night Vision Device
NVG- Night Vision Goggle
OC/T- Observer Coach/ Trainer
OCTA- Observer Coach Trainer Academy
O&I- Operations and Intelligence
OD- Obstacle Detachment
OP- Observation Post
OUTTIL- Out-Until (Time)
P2P- Peer-to-Peer
PC- Pilot-in-Command
MIK- Player Detection Device
PEDD- Patrol Explosive Detector Dog
PIC- Pilot in Charge
Pk- Probability of Kill
PMCS- Preventative Maintenance Checks and Services
PPC- Performance Planning Card
PPE- Personal Protective Equipment
PPK- Probably of Personnel Kill
PPO- Project Purchasing Officer
PPR- Prior Permission Required (form required to fly inside restricted airspace)
PR- Personnel Recovery
PRCC- Personnel Recovery Coordination Center
PRF- Pulse Repetition Frequency
R&S- Reconnaissance and Surveillance
RCS- Radar Cross Section
RCs- Road Craters

RCT- Regimental Combat Team
RCU- Remote Control Unit
RFF- Request for Forces
RFL- Restrictive Fire Line
RGBs/Hyper's- Screenshot Capture
RL/LD- Release Line/ Line of Departure
ROBE- Resumption of Battlefield Effects
ROZs- Restricted Operating Zones
R-PDA- Ruggedized - Personal Digital Assistant
RPV- Remotely Piloted Vehicle
RSS- Radar Simulation System
RUV- Rotational Unit Visitors
RVT- Remote Video Terminal
SAWE- Simulated Area Weapons Effects
SBCU- Simulated Battery Coolant Unit
SBD- Simulated Battle Damage
SBE- Stay Behind Equipment
SDZ- Surface Danger Zone
SEP- System Enhancement Package
SERE- Survival, Resistance, Escape & Evasion
SIMO- Simultaneous Observation
SIR- Specific Information Requirement
SMODIM- Small Onboard Data Interface Module
SNAP- SIPR NIPR Access Point
SNMPC- Simple Network Management System Protocol
SOBE- Suspension of Battlefield Effects
SOFA- Status of Forces Agreement
SPINS- Special Instructions
SSD- Specialized Search Dog
SSS- Single Shelter Switch
STT- Satellite Terminal Trailer
SVEST- Suicide Vest
SWM- Spare Wheel Module
T/MDV- Towed/Mine Detection Vehicle
TAA- Tactical Assembly Area
TAC- Tactical Assault CP
TACAIR- Tactical Air
TACP- Tactical Air Control Party
TAF- Tactical Analysis Facility
TAFF- Training Analysis and Feedback Facility
TASC- Training Aid Support Center
THT- Tactical HUMINT Team
TIC- Troops in Contact
TOC- Tactical Operation Center
TP- Training Projectile
UAS- Unmanned Aerial System
UAV- Unmanned Aerial Vehicle
UBL- Unit Basic Load
VBIED- Vehicle Borne IED
VDD- Vehicle Detector Device
VDO – Vehicle Drop-Off
VEL- Velocity
VHD- Vertical Hazard Distance
VISMOD- Visually Modified
VOIED- Victim Operated IED
VT- Variable Time

WAN- Wide Area Network
WCS- Weapons Control Status
WITS- Wireless Independent Target System
WSP- Weapon Safety Posture